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APPARATUS, SYSTEMS AND METHODS FOR MANAGING INCOMING AND
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ABSTRACT:

The present invention provides apparatus, systems and methods for managing incoming and outgoing communications for various communications methods. The invention provides control over inbound communications including definition of if, when, and who may communicate with a recipient. The invention also supports concealed identification communication in that no actual addresses, phone numbers, or other addressing IDs are required to be exchanged by the communication initiator and recipient. The invention also provides the capability to initiate immediate, delayed, scheduled, or recurring outbound communications. As depicted in FIG. 1, if the database (45) contains call management settings for a call recipient, the application logic (40) will evaluate the rules to determine if a particular caller is authorized to connect with the call recipient at the current time and date. If the caller is authorized by the recipient to connect to the recipient phone number, and is furthermore authorized to do so for the current time and date, the application logic (40) will connect the call utilizing the public telephone switch (50). The computer (1) passes the caller and call recipient phone numbers as stored in the database (45) to the telephone switch (50) using an application programming interface ("API") appropriate to the service provider or telephone switch manufacturer. The exemplary embodiment of the invention utilizes an API provided by a telephone service provider as an interface to its switching infrastructure (50). The API captures both caller and recipient telephone numbers along with other variables useful for call setup and tracking. The telephone service provider then connects both parties' telephones (55), (60) to a phone call by dialing both numbers and connecting the call upon the parties' answer.

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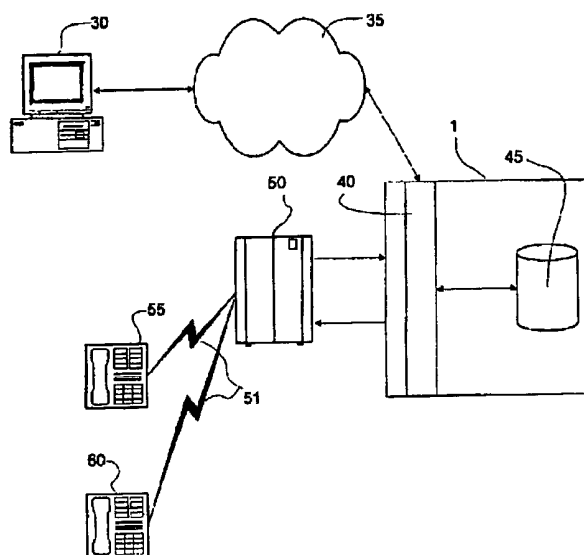
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(54) Title: APPARATUS, SYSTEMS AND METHODS FOR MANAGING INCOMING AND OUTGOING COMMUNICATION



(57) Abstract: The present invention provides apparatus, systems and methods for managing incoming and outgoing communications for various communications methods. The invention provides control over inbound communications including definition of if, when, and who may communicate with a recipient. The invention also supports concealed identification communication in that no actual addresses, phone numbers, or other addressing IDs are required to be exchanged by the communication initiator and recipient. The invention also provides the capability to initiate immediate, delayed, scheduled, or recurring outbound communications. As depicted in FIG. 1, if the database (45) contains call management settings for a call recipient, the application logic (40) will evaluate the rules to determine if a particular caller is authorized to connect with the call recipient at the current time and date. If the caller is authorized by the recipient to connect to the recipient phone number, and is furthermore authorized to do so for the current time and date, the application logic (40) will connect the call utilizing the public telephone switch (50). The computer (1) passes the caller and

call recipient phone numbers as stored in the database (45) to the telephone switch (50) using an application programming interface ("API") appropriate to the service provider or telephone switch manufacturer. The exemplary embodiment of the invention utilizes an API provided by a telephone service provider as an interface to its switching infrastructure (50). The API captures both caller and recipient telephone numbers along with other variables useful for call setup and tracking. The telephone service provider then connects both parties' telephones (55), (60) to a phone call by dialing both numbers and connecting the call upon the parties' answer.

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1 **APPARATUS, SYSTEMS AND METHODS FOR MANAGING INCOMING AND**
2 **OUTGOING COMMUNICATION**

3
4 **CROSS REFERENCE TO RELATED APPLICATIONS**

5 Priority is claimed to U.S. Provisional Patent Application Serial No. 60/299,118 entitled
6 "APPARATUS, SYSTEMS AND METHODS FOR MANAGING INCOMING AND
7 OUTGOING COMMUNICATION", filed on June 18, 2001, the disclosure of which is
8 incorporated for all purposes herein in full by reference as if stated in full herein.

9
10 **FIELD OF THE INVENTION**

11 The field of the present invention is electronic and standard communication methods and
12 more particularly, managing incoming and outgoing communication.

13
14 **BACKGROUND OF THE INVENTION**

15 Personal and business communication methods range from hardcopy written and printed
16 items, voice communication systems, and a variety of electronic methods. Common among
17 existing communication methods is the lack of tools for users to manage their inbound and
18 outbound communications. Existing communication methods also share in common privacy
19 problems related to the distribution by a communications recipient of the personal addresses,
20 telephone numbers, system IDs, etc. of communications participants.

21 Ultimately, all communications consist of a communication sender and one or more
22 recipients. Each communication method provides for addressing, initiating transmission,
23 transmission, and delivery of, a communication. Some communication methods also provide for
24 denial of delivery, verification of delivery, and the ability to respond to a communication.

25 There are various methods of two-way and one-way communication methods. A
26 sequence of sending and receiving communications between two or more parties can be
27 accomplished using the various communication methods with differing levels of effectiveness
28 and ease of use, depending on the method used. For example, a two-way conversation via
29 telephone happens more quickly than via electronic mail or pager.

30 One communication method is the existing wired telephone system. The existing wired
31 telephone system consists of interconnected networks operated and maintained by commercial
32 and government entities throughout the world. Standard telephones are very simple
33 communication devices and the supporting telecommunication networks offer very few services.

1 Beyond the ability to connect calls, common features available as standard or options include:
2 three way calling, call waiting, caller id, call blocking, call forwarding, and return call
3 (sometimes referred to as *69). In the industrialized nations of the world telephone
4 communication is a standard communication method.

5 Cellular telephones provide another method of communication. Cellular telephone use
6 has grown dramatically in recent years. The early analog cell phones and accompanying
7 networks offered limited quality and features, and usage costs were dramatically higher than
8 standard wired phones. Cellular telephones and their networks offer convenience and features
9 beyond traditional phones, often including electronic phone books, call logging, email and SMS
10 (Short Message Service) capability, application capabilities via WAP (Wireless Area Protocol),
11 and Internet access via small format web browsers. Most cellular systems offer these extended
12 capabilities along with the wired telephone system features as discussed above.

13 Originally a business tool, voice messaging is another communication method that has
14 grown beyond the business environment and into most homes in North America and many other
15 parts of the world. Voice messaging or voice mail can be implemented with stand alone
16 "answering machine" devices typically used in homes, can be implemented with a commercial
17 phone system, or can be offered as part of a telephone carrier service package. These systems
18 store audio messages which may later be retrieved by the target recipient or recipients. Some
19 enhanced systems provide functionality to forward messages to others, reply to a message, or
20 deliver the message to an external system such as email.

21 Instant messaging (IM) is a relatively new communication method that leverages the
22 Internet infrastructure to communicate primarily by text. The most popular instant messaging
23 systems include: AOL Instant messenger, MSN Messenger, Yahoo! Messenger, and ICQ.
24 These systems represent many millions of instant messaging users throughout the world. The
25 technology derives its name from the basic capability in which a user can send another (a
26 recipient) a simple text message which instantly appears on the recipient's IM interface. The
27 messages are usually displayed in a scrolling interface where the last message sent by any party
28 is displayed at the bottom and previous messages are displayed above. Each message begins
29 with an indicator of who sent the message, typically an alias name chosen by the user to
30 represent themselves in the IM application. Other features of IM now include the ability to
31 format text in a variety of sizes, fonts, and colors, the ability to block individual IM users from
32 sending messages to an individual recipient, the ability to transfer files, and the ability to use a
33 computer microphone and speaker to accomplish voice communications from the IM interface.

1 Electronic mail (email) is a common computer-based communication method. Email
2 enables users to exchange text messages, enhanced HTML formatted messages, and files. Email
3 applications have grown in complexity to offer contact management capabilities, scheduling,
4 and rules for handling inbound and outbound messages.

5 Multi-party conference calling is a popular business communication method that enables
6 more than two participating phone connections to interact via voice. Conference calls are
7 offered by telecommunication service providers or provided as a feature of commercial
8 telephone systems. Typically, conference callers dial a specific telephone number to join a call,
9 and must enter a valid ID code to authorize connection to a particular call. Service providers
10 sometimes offer options to have the call monitored by an operator who will announce callers as
11 they enter and deal with any questions regarding the service or sound quality issues. Depending
12 on the service, conference calls can be made spontaneously or may require lead time to schedule
13 at a specific date and time.

14 A predecessor to the conference call, a party line call offers an open line for either a
15 fixed number or unlimited number of callers to participate in a group call. A party line is a fixed
16 telephone number, usually without any access restrictions which is available 24 hours a day.
17 Party lines may or may not be monitored by a managing party and at times have one or more
18 "leaders" who serve as experts or guide the content of the call.

19 Numeric and alphanumeric paging devices provide other common communication
20 methods. Many pagers in use offer one-way communication in that they receive but cannot send
21 messages. New paging devices offer two-way communications via fixed choice responses, or
22 via a data input device such as a keyboard. Most pager systems can also receive messages
23 originated from a web page, software application, or email.

24 Interactive television (ITV) is an emerging new communication technology combining
25 traditional broadcasting with interactive capabilities similar to computers. Large media, cable,
26 and technology companies such as AOL/Time Warner, AT&T, Cox, Comcast, General
27 Instruments, and Microsoft have invested hundreds of millions of dollars in developing pilot and
28 limited deployment systems. The functionality offered varies by provider but common features
29 include: ability to browse the web and send email, ability to purchase pay-per-view content, and
30 ability to interact with programming and advertising content.

31 Similar to ITV, satellite systems, and particularly the generation of DSS based systems,
32 are broadcast technology offerings which are evolving to two-way interaction. Current DSS

1 systems offer limited two way communications using a modem built into the control unit which
2 can call the satellite provider to request pay-per-view programming.

3 Short messaging service (SMS) is an emerging communication technology generally
4 related to digital cellular telephones. It can also be implemented in non-cellular devices. SMS
5 can deliver short text-only messages between compatible devices. It has become popular with
6 some cellular users, particularly in Europe. SMS users utilize a cellular telephone number as the
7 address to which to send the communication. SMS systems are usually equipped with an email
8 gateway in order to interact with email users on the Internet.

9 The oldest form of distance communication is the delivery of written documents and
10 packages via postal mail and delivery services. Common to all civilized areas of the world, this
11 communication method is the most pervasive.

12 Video conferencing was an evolution of the conference call and is a communication
13 method that has grown in business use over the years, particularly as an alternative to travel.
14 Standards for video conferencing exist to ensure compatibility between hardware and software
15 manufacturers. Many systems are based on proprietary hardware while others use computers
16 and common input and output devices. The basic functionality of these systems is to
17 simultaneously transmit video and audio between two or more conference locations. The
18 bandwidth required for video conferencing usually demands ISDN or higher speed connections.
19 Conference locations exist in companies, government agencies, hotels, office suites, and
20 business services companies such as Kinko's.

21 Similar to video conferencing, video telephones provide a way for users to place video
22 and voice calls to another party. The video telephone uses standard telephone line connections
23 and can only connect two users. These units also provide standard telephone capabilities.

24 Other types of Internet-enabled video and audio devices such as web cameras allow
25 either audio, video, or both to be simultaneously transmitted from one user to one or more
26 compatible receiving devices or standard computers with compatible decoding, display and
27 audio systems. Some units of this type may be directly connected to a telephone or other
28 network connection for operation, although most require a computer connected to the public
29 Internet or private network to function.

30 New types of multimedia communication applications have been developed to leverage
31 the capabilities of the public Internet. These applications allow teams of disparate individuals to
32 collaborate using combinations of video, audio, still images, document sharing, live scanning of
33 documents, white boarding, and other dynamic image, video, and audio capabilities. These

1 applications vary in features and compatibility. This growing segment of communication
2 applications provides complex levels of communication not available before.

3 The facsimile was a significant leap for business communication, second only to the
4 telephone itself. Although use of the facsimile has declined as email has grown in popularity,
5 the fax is still a widely used method to transfer documents.

6 Existing communication methods lack of tools for users to manage their inbound and
7 outbound communications, and to manage privacy of personal addresses, telephone numbers,
8 system IDs, etc.

9 For example, in the case of telephone calls, a call recipient has no way of controlling
10 parties that can call them. The recipient has no way to control when they are willing to receive
11 calls. And the recipient has no way to route calls to a particular phone number based on the
12 identification of the party that is calling and the current date and time.

13 Existing communication management methods provide, for example, ways to block a
14 caller. Caller blocking is based on the source phone number from which a call is made to a
15 recipient phone number. However, call blocking is limited in that the calling party need only
16 change the phone from which they call to get through the call blocking. A more comprehensive
17 communications management approach is needed.

18 Existing communication methods offer only limited means of initiating a communication
19 session. In typical existing communications systems, the calling party is required to obtain a
20 unique "address" of a called device. For example, in the case of a telephone call, the calling
21 party must obtain a telephone number of the call recipient in order to initiate a call. Initiating a
22 communication session in existing communication systems requires the initiator, either human
23 or automated system, to know the communication address of one or all parties. This
24 arrangement risks privacy of those communicating, limits the ability to manage transmission and
25 reception between two or more parties, and requires a third party initiator, either a person or
26 automated system, to know the communication addresses of each participant in the
27 communication.

28

29 SUMMARY OF THE INVENTION

30 The present invention provides apparatus, systems and methods for managing incoming
31 and outgoing communications for various communications methods. A wide variety of human
32 delivery-based, telecommunications-based, and electronic-based communications are supported
33 in various embodiments of the invention. The invention provides control over inbound

1 communications including definition of if, when, and who may communicate with a recipient.
2 The invention also supports concealed identification communication in that no actual addresses,
3 phone numbers, or other addressing IDs are required to be exchanged by the communication
4 initiator and recipient. The invention also provides the capability to initiate immediate, delayed,
5 scheduled, or recurring outbound communications.

6 The invention provides a computer-based machine with the capability to manage various
7 communication methods.

8 The invention provides apparatus, systems and methods for managing incoming
9 telephone calls to an individual such that the call recipient can control if they will take calls,
10 when they will take calls, and who they will allow to call them.

11 The invention provides apparatus, systems and methods for initiating rules enforced and
12 concealed phone number telephone calls using an Internet URL, web form, or other Internet
13 input mechanism.

14 The invention provides a method for telephone calls to occur without communicating
15 parties revealing their telephone numbers.

16 The invention provides apparatus, systems and methods to manage telephone calls
17 originating with an individual such that calls are automatically connected after a designated,
18 timed delay.

19 The invention provides apparatus, systems and methods to manage telephone calls
20 originating with an individual such that calls are automatically connected at a specific date and
21 time.

22 The invention provides apparatus, systems and methods to manage telephone calls
23 originating with an individual such that calls are automatically connected on a recurring
24 schedule.

25 The invention provides apparatus, systems and methods of assigning one or many non-
26 telephone system identification numbers which can be used in conjunction with the Internet
27 and/or the traditional telecommunication system to initiate a telephone call between parties.

28 The invention provides apparatus, systems and methods to establish and automatically
29 enforce rules and conditions for if, who, and when a party may leave a voice message for
30 another.

31 The invention provides apparatus, systems and methods for connecting a party to
32 another's voice messaging service using the established telecommunication system without
33 revealing the receiving party's messaging system phone number and/or mailbox id.

1 The invention provides apparatus, systems and methods to establish and automatically
2 enforce rules and conditions for if, who, and when a party may send an instant message to
3 another.

4 The invention provides apparatus, systems and methods to establish and automatically
5 enforce rules and condition for if, who, and when a party may send an email message to another.

6 The invention provides apparatus, systems and methods for initiating managed
7 communications via a variety of computer and Internet applications and objects.

8 The invention provides apparatus, systems and methods for establishing conference calls
9 via an automated connection mechanism which will connect all parties instantly or at the
10 established time and date and at their pre-determined phone numbers.

11 The invention provides apparatus, systems and methods for establishing party line
12 connections utilizing an Internet URL, web form, or other Internet input method.

13 The invention provides apparatus, systems and methods for utilizing WAP or Web-
14 enabled cellular telephone or an IP telephone to initiate telephone connections bypassing
15 telephone carriers' phone numbering system while concealing the caller and call recipient
16 telephone numbers.

17 The invention provides apparatus, systems and methods for establishing and
18 automatically enforcing rules and conditions for if, who, and when a party may leave a text or
19 numeric page for another.

20 The invention provides apparatus, systems and methods for connecting a party to
21 another's paging service using the established telecommunication system without revealing the
22 caller's or the paging system phone number or PIN.

23 The invention provides apparatus, systems and methods for offering callers and call
24 recipients options as to who will pay for a telephone call either by dictating rules prior to the call
25 or offering the option at the time of the call. Call recipients have the ability to define rules as to
26 which persons they will require to pay for calls, and which persons the recipient is willing to
27 pay. Callers are offered an ability to pay for a call when required by the recipient and optionally
28 may pay for a call even if not required by the recipient.

29 The invention provides apparatus, systems and methods for placing telephone calls using
30 an interactive television device and service.

31 The invention provides apparatus, systems and methods for placing telephone calls using
32 DSS or other satellite systems.

1 The invention provides apparatus, systems and methods for establishing and
2 automatically enforcing rules and conditions for if, who, and when a party may send a Short
3 Message Service (SMS) message for another.

4 The invention provides apparatus, systems and methods for originating, sending, and
5 receiving an SMS message without revealing the message recipient or the caller's number or
6 other communication address.

7 The invention provides apparatus, systems and methods for establishing and
8 automatically enforcing rules and conditions for if, who, and when a party may send a letter or
9 package to another.

10 The invention provides apparatus, systems and methods for sending a letter or package
11 to a party using established postal and delivery services without revealing the sender's or the
12 recipient's address.

13 The invention provides apparatus, systems and methods for establishing and
14 automatically enforcing rules and conditions for if, who, and when a party may connect a video
15 conference, video phone call, or Internet-based video or audio, or multimedia communication
16 with another.

17 The invention provides apparatus, systems and methods for originating and connecting a
18 video conference, video phone call, or Internet-based video or audio, or multimedia
19 communication without revealing the message recipient or the caller's number or other
20 communication address.

21 The invention provides apparatus, systems and methods for establishing and
22 automatically enforcing rules and conditions for if, who, and when a party may send a facsimile
23 to another.

24 The invention provides apparatus, systems and methods for originating, sending, and
25 receiving a facsimile without revealing the message recipient or the caller's fax phone number.

26 The invention provides apparatus, systems and methods for initiating communications
27 sessions between two or more users, communications devices, or software applications, or
28 combinations thereof, by a user, device, or software application participating in the
29 communication or an independent third party user, device, or software application without the
30 initiating party, device, or software application having knowledge of the communicating parties'
31 communication addresses.

32 The invention provides apparatus, systems and methods for using keywords in a software
33 application to initiate telephone calls.

1 The invention provides systems and methods for applications supporting keywords to
2 relate phone call initiation codes generated by the invention to keywords.

3 The invention provides systems and methods for applications supporting keywords to
4 relate communication initiation codes generated by the invention to keywords.

5 The invention provides systems and methods for applications supporting keywords to
6 relate electronic document address codes generated by the invention to keywords.

7 The invention provides apparatus, systems and methods for a web browser and software
8 applications supporting keywords to initiate a telephone call in response to input by a user of a
9 designated identifier, such as a keyword, wherein the designated identifier is one of a plurality
10 of designated identifiers registered with the system.

11 The invention provides apparatus, systems and methods for a search engine to initiate a
12 telephone call in response to input by a user of a designated identifier, such as a keyword,
13 wherein the designated identifier is one of a plurality of designated identifiers registered with
14 the system.

15 The invention provides apparatus, systems and methods for relating Domain Name
16 Service (DNS) host entries to system codes and phone numbers in the system.

17 The invention provides apparatus, systems and methods for relating Domain Name
18 Service (DNS) host entries to system codes and communication addresses in the system.

19 The invention provides apparatus, systems and methods for relating Domain Name
20 Service (DNS) host entries to system codes and electronic document addresses in the system.

21 The invention provides apparatus, systems and methods for initiating telephone calls in
22 response to a user input into a web browser input box of a host name or a complete URL of a
23 host name.

24 The invention provides apparatus, systems and methods for initiating various
25 communication types in response to a user input into a web browser box of a host name or
26 complete URL of a host name.

27 The invention provides apparatus, systems and methods for automated downloading of
28 electronic documents in response to a user input into a web browser box of a host name or a
29 complete URL of a host name.

30 The invention provides systems and methods for search engines supporting result set
31 keywords to relate phone call initiation codes generated by the invention to keywords.

32 The invention provides systems and methods for search engines supporting result set
33 keywords to relate communication initiation codes generated by the invention to keywords.

1 The invention provides systems and methods for search engines supporting result set
2 keywords to relate electronic document address codes generated by the invention to keywords.

3 The invention provides systems and methods for search engines to evaluate search result
4 sets for the presence of defined words or characters, also referenced herein as "result set
5 keywords", and to insert phone call initiation links or buttons into the search results displayed to
6 the user.

7 The invention provides systems and methods for search engines to evaluate search result
8 sets for the presence of result set keywords and to insert communication initiation links or
9 buttons into the search results displayed to the user.

10 The invention provides systems and methods for search engines to evaluate search result
11 sets for the presence of result set keywords and to insert electronic document download links or
12 buttons into the search results displayed to the user.

13 The invention provides apparatus, systems, and methods for search engines to index web
14 pages encoded with special meta tags in a way that allows for automatic extraction of phone
15 number, communication address, and/or electronic document address, for which the invention
16 generates a system code embedded URL that will in turn be added as a link or button to the
17 search results displayed to the user.

18 The invention provides apparatus, systems, and methods for search engines to index web
19 pages encoded with special meta tags in a way that allows for automatic extraction of invention
20 generated URLs for phone number, communication address, and/or electronic document
21 address, that will be added as a link or button to the search results displayed to the user.

22 23 **BRIEF DESCRIPTION OF THE DRAWINGS**

24 These and other features of the present invention are more fully set forth in the following
25 description of exemplary embodiments of the invention. The description is presented with
26 reference to the accompanying drawings in which:

27 FIG. 1 is a graphic representation of a computer for managing communication connected
28 to both a traditional telephone network and the Internet in an exemplary embodiment of the
29 invention;

30 FIG. 2 is a graphic representation of a computer for managing communications
31 connected to a traditional telephone network in an exemplary embodiment of the invention;

1 FIG. 3 is a flow chart of the process of an exemplary embodiment of the present
2 invention for connecting two parties to a phone call without revealing telephone numbers to
3 either party;

4 FIG. 4 is a flow chart of the process of an exemplary embodiment of the present
5 invention to automatically connect parties to a phone call after a specific delay time;

6 FIG. 5 is a flow chart of the process of an exemplary embodiment of the present
7 invention to manage inbound telephone calls such that the call recipient can control if, when,
8 and who may call them;

9 FIG. 6 is a flow chart of the process of an exemplary embodiment of the present
10 invention to automatically connect parties to a phone call at a specific date and time;

11 FIG. 7 is a flow chart of the process of an exemplary embodiment of the present
12 invention to automatically connect parties to a phone call on a recurring schedule;

13 FIG. 8 is a flow chart of the process of an exemplary embodiment of the present
14 invention to create a unique system identification code related to a telephone number which may
15 be used as an alternative method to initiate telephone calls;

16 FIG. 9 is a flow chart of the process of an exemplary embodiment of the present
17 invention to manage incoming voice messages such that the message recipient can control if,
18 when, and who may leave voice messages to them;

19 FIG. 10 is a flow chart of the process of an exemplary embodiment of the present
20 invention to connect a party to another's voice messaging service without revealing the voice
21 messaging system telephone number and optionally mailbox number to the calling party;

22 FIG. 11 is a flow chart of the process of an exemplary embodiment of the present
23 invention to manage incoming instant messages such that the message recipient can control if,
24 when, and who may send instant messages to them;

25 FIG. 12 is a flow chart of the process of an exemplary embodiment of the present
26 invention to manage incoming email messages such that the message recipient can control if,
27 when, and who may send email messages to them;

28 FIG. 13 is a flow chart of the process of an exemplary embodiment of the present
29 invention to create and utilize unique Internet URLs which can be used to initiate rules-managed
30 telephone calls when embedded into Internet objects and applications;

31 FIG. 14 is a flow chart of the process of an exemplary embodiment of the present
32 invention to establish conference calls via an automated, scheduled connection mechanism;

1 FIG. 15 is a flow chart of the process of an exemplary embodiment of the present
2 invention to connect party line callers utilizing an Internet URL, web form, or other Internet
3 input method;

4 FIG. 16 is a graphic representation depicting cellular phones use WAP or cellular web
5 browsers to initiate calls using a computer for managing communications that is connected to a
6 traditional telephone network in an exemplary embodiment of the present invention;

7 FIG. 17 is a flow chart of the process of an exemplary embodiment of the present
8 invention to connect cellular users to other parties phone numbers without the call recipient
9 revealing their phone number;

10 FIG. 18 is a flow chart of the process of an exemplary embodiment of the present
11 invention to manage incoming pager messages such that the message recipient can control if,
12 when, and who may send pager messages to them;

13 FIG. 19 is a flow chart of the process of an exemplary embodiment of the present
14 invention for a party to send a message to a recipient's pager without revealing the paging
15 system telephone number or paging recipient's PIN number to the calling party;

16 FIG. 20 is a flow chart of the process of an exemplary embodiment of the present
17 invention to provide callers and call recipients the choice of who will pay connection charges for
18 a telephone call;

19 FIG. 21 is a graphic representation depicting televisions with embedded or add-on
20 interactive television capabilities initiating calls using a computer for managing communications
21 that is connected to a traditional telephone network and the ITV network in an exemplary
22 embodiment of the present invention;

23 FIG. 22 is a graphic representation depicting televisions with embedded or add-on
24 satellite communications systems initiating calls using a computer for managing
25 communications that is connected to a traditional telephone network and the satellite network in
26 an exemplary embodiment of the present invention;

27 FIG. 23 is a flow chart of the process of an exemplary embodiment of the present
28 invention to manage incoming SMS messages such that the message recipient can control if,
29 when, and who may send SMS messages to them;

30 FIG. 24 is a flow chart of the process of an exemplary embodiment of the present
31 invention for a party to send an SMS message to a recipient's SMS enabled device without
32 revealing the SMS recipient number to the sending party;

1 FIG. 25 is a flow chart of the process of an exemplary embodiment of the present
2 invention to manage incoming mail and packages such that the recipient can control if, when,
3 and who may send mail and packages to them;

4 FIG. 26 is a flow chart of the process of an exemplary embodiment of the present
5 invention for a party to send mail or a package to a recipients address without revealing the
6 recipient address to the sending party or the return address to the recipient;

7 FIG. 27 is a graphic representation depicting video conferencing system and video phone
8 call users initiating calls using a computer for managing communications that is connected to a
9 traditional telephone network in an exemplary embodiment of the present invention;

10 FIG. 28 is a graphic representation depicting video conferencing system, video phone
11 call, or Internet-based video and/or audio, or multimedia communication application users
12 initiating calls using a computer for managing communications that is connected to the Internet
13 or a private network in an exemplary embodiment of the present invention;

14 FIG. 29 is a flow chart of the process in an exemplary embodiment of the present
15 invention to connect video conferencing system or video phone call users to other parties'
16 compatible systems via the traditional telephone network without the call recipient(s) revealing
17 their video system phone number;

18 FIG. 30 is a flow chart of the process in an exemplary embodiment of the present
19 invention to connect video conference, video phone call, or Internet-based video and/or audio,
20 or multimedia communication users to other parties' compatible systems via the Internet without
21 the call recipient(s) revealing their video system address, IP address, phone number, or other
22 user system specific communication address;

23 FIG. 31 is a graphic representation depicting facsimile machines and computer based
24 facsimile applications initiating and receiving calls using a computer for managing
25 communications that is connected to a traditional telephone network and to the Internet or
26 private network in an exemplary embodiment of the invention;

27 FIG. 32 is a flow chart of the process to connect facsimile machines and computer based
28 facsimile applications to recipient facsimile devices without the fax recipient revealing their
29 device phone number or Internet address, or other such communication address in an exemplary
30 embodiment of the invention;

31 FIG. 33 is a graphic representation depicting a computer screen that serves as a status
32 and quick override of inbound call management rules in an exemplary embodiment of the
33 invention;

1 FIG. 34 is a graphic representation depicting a computer screen that provides users the
2 ability to add an inbound call management rule for a specific day of the week in an exemplary
3 embodiment of the invention;

4 FIG. 35 is a graphic representation depicting a computer screen that provides users the
5 ability to override inbound call management rules for a specific time and date range in an
6 exemplary embodiment of the invention;

7 FIG. 36 is a graphic representation depicting a computer screen that provides users the
8 ability to add an inbound call management rule for a specific time and date range and apply that
9 rule to one or more days of the week in an exemplary embodiment of the invention;

10 FIG. 37 is a flow chart of an exemplary process in an exemplary embodiment of the
11 present invention by which a calling party, device, or software application initiates
12 communications to a called party without supplying the communication address(es) of the called
13 party, device, or software application;

14 FIG. 38 is a graphic representation of a computer for managing communication
15 connected to a traditional telephone network and integrated with a software application which
16 supports keyword functionality in an exemplary embodiment of the invention;

17 FIG. 39 is a flow chart of the process to relate phone numbers and call initiation codes to
18 keywords in an exemplary embodiment of the present invention;

19 FIG. 40 is a flow chart of the process to relate communication addresses and
20 communication initiation codes to keywords in an exemplary embodiment of the present
21 invention;

22 FIG. 41 is a flow chart of the process to relate electronic document addresses and
23 electronic document retrieval codes to keywords in an exemplary embodiment of the present
24 invention;

25 FIG. 42 is a flow chart of the process to initiate telephone calls when users enter
26 specified keywords into web browser or other application's web address input box in an
27 exemplary embodiment of the present invention;

28 FIG. 43 is a flow chart of the process to initiate telephone calls when users enter
29 specified keywords into search engine input box in an exemplary embodiment of the present
30 invention;

31 FIG. 44 is a flow chart of the process in an exemplary embodiment of the present
32 invention to relate telephone numbers and call initiation codes to Domain Name Service (DNS)
33 host entries;

1 FIG. 45 is a flow chart of the process in an exemplary embodiment of the present
2 invention to relate communication addresses and communication initiation codes to Domain
3 Name Service (DNS) host entries;

4 FIG. 46 is a flow chart of the process in an exemplary embodiment of the present
5 invention to relate electronic document addresses and download initiation codes to Domain
6 Name Service (DNS) host entries;

7 FIG. 47 is a flow chart of the process to initiate telephone calls when a user enters a host
8 name or host URL into a web browser input box in an exemplary embodiment of the present
9 invention;

10 FIG. 48 is a flow chart of the process to initiate various communications when a user
11 enters a host name or host URL into a web browser input box in an exemplary embodiment of
12 the present invention;

13 FIG. 49 is a flow chart of the process to initiate electronic document download when a
14 user enters a host name or host URL into a web browser input box in an exemplary embodiment
15 of the present invention;

16 FIG. 50 is a flow chart of the process in an exemplary embodiment of the present
17 invention to relate phone call initiation codes generated by the invention to search engine result
18 set keywords;

19 FIG. 51 is a flow chart of the process in an exemplary embodiment of the present
20 invention to relate communication initiation codes generated by the invention to search engine
21 result set keywords;

22 FIG. 52 is a flow chart of the process in an exemplary embodiment of the present
23 invention to relate electronic document download initiation codes generated by the invention to
24 search engine result set keywords;

25 FIG. 53 is a flow chart of the process for search engines to evaluate search result sets for
26 the presence of keywords and to insert phone call initiation links or buttons into the search
27 results in an exemplary embodiment of the present invention;

28 FIG. 54 is a flow chart of the process for search engines to evaluate search result sets for
29 the presence of keywords and to insert communication initiation links or buttons into the search
30 results in an exemplary embodiment of the present invention;

31 FIG. 55 is a flow chart of the process for search engines to evaluate search result sets for
32 the presence of keywords and to insert document download initiation links or buttons into the
33 search results in an exemplary embodiment of the present invention;

1 FIG. 56 is a flow chart of the process in an exemplary embodiment of the present
2 invention for using unique HTML meta tags in web pages so that properly arranged search
3 engines can automatically extract phone numbers, communication addresses, and electronic
4 document addresses from the pages, generate system initiation codes using the invention, and
5 present the initiation code links or buttons along with search results.

6 FIG. 57 is a flow chart of the process in an exemplary embodiment of the present
7 invention for using unique HTML meta tags in web pages so that properly arranged search
8 engines can automatically extract invention generated system codes or URLs from the pages
9 such that phone calls, electronic document downloads, and other communications are able to be
10 initiated via links or buttons along with search results.

11 FIG. 58 is a block diagram depicting the hierarchy of computer screens that comprise the
12 user application interface of an exemplary embodiment of the present invention;

13 FIG. 59 is a data relationship diagram depicting data relationships in an exemplary
14 embodiment of the present invention;

15 FIG. 60 is a flow chart of the process in the exemplary embodiment of the invention to
16 provide web browsers, search engines, and other keyword-supporting applications a mechanism
17 with which to initiate various types of communication sessions when specific keywords are
18 entered by users in the application input box;

19 FIG. 61 is a flow chart of the process in the exemplary embodiment of the invention to
20 provide web browsers, search engines, and other keyword-supporting applications with a
21 mechanism to initiate electronic document downloads in response to specific user-input
22 keywords entered by users in the application input box;

23 FIG. 62 is a flow chart of the process in the exemplary embodiment of the invention to
24 provide a method of utilizing instant messaging ("IM") software and services to automate
25 detection and creation of user accounts within the system of the invention in preparation to
26 initiate telephone calls or other communication sessions; and

27 FIG. 63 is a flow chart of the process in the exemplary embodiment of the invention to
28 provide a method of utilizing instant messaging ("IM") software and services to initiate
29 telephone calls or other communication sessions.

30 31 **DETAILED DESCRIPTION OF THE INVENTION**

32 The present invention provides management capabilities to a wide variety of
33 communication methods and their supporting devices, including but not limited to the various

1 communication methods described above. It will be understood by someone with ordinary skill
2 in the art, however, that the present invention may be embodied in various forms and be
3 implemented with other existing and future communication methods without departing from the
4 spirit of the invention. Accordingly, the types of communications methods described above
5 with which the present invention can be use is not a limitation of the invention, but are
6 representative and illustrative.

7 Detailed descriptions of an exemplary embodiment are provided herein. It is to be
8 understood, however, that the present invention may be embodied in various forms. Therefore,
9 specific details disclosed herein are not to be interpreted as limiting, but rather as a basis for
10 teaching one skilled in the art to employ the present invention in virtually any appropriately
11 detailed system, structure or manner.

12 In the exemplary embodiment of the present invention, a number of stored procedures
13 are provided to perform functions, some of which are described in summary in the section below
14 herein entitled "EXEMPLARY EMBODIMENT STORED PROCEDURE SUMMARY".

15 In the exemplary embodiment, an Application Programming Interface (API) is provided
16 with which service providers of applications, search engines, and the like can invoke certain
17 functions of the exemplary system of the exemplary embodiment of the present invention. A
18 number of API instruction components in the exemplary API are summarized in the section
19 below herein entitled "EXEMPLARY EMBODIMENT APPLICATION PROGRAMMING
20 INTERFACE".

21 In the exemplary embodiment of the present invention, a computer and software
22 applications of the exemplary embodiment of the present invention will be implemented with,
23 among other things, a Windows 2000™ (Microsoft product) server operating system being run
24 on an Intel™ Pentium™ processor. Table 1 depicts further systems tools with which the
25 exemplary embodiment of the present invention would be implemented.

26

27 TABLE 1

28 Computer Technologies for an Exemplary Embodiment of the Present Invention

- 29 - Windows 2000 Advanced Server
- 30 - Microsoft IIS
- 31 - Active Server Pages
- 32 - COM
- 33 - aspHTTP - commercial product used for HTTP form posting

- 1 - aspEncrypt - commercial product we use for encrypting data
- 2 - aspEmail - commercial product used for sending email via SMTP
- 3 - ADO
- 4 - Microsoft SQL Server 2000

5
6 It will be understood by someone with ordinary skill in the art that the present invention
7 can be implemented using modifications to other operating systems and processors without
8 departing from the spirit of the present invention. The invention provides for scalability and
9 distributability; the invention can be implemented on one server, or across as many servers as
10 necessary to satisfy performance requirements.

11 FIG. 1 is a graphic representation of a computer 1 for managing communication that is
12 connected to both a traditional telephone network and the Internet in an exemplary embodiment
13 of the invention. The computer 1 is of the traditional type including ROM, RAM, a processor,
14 etc. The computer 1 is shown connected to a public telephone system switch 50, which is in
15 turn connected to the worldwide public telephone network 51. The computer 1 is also
16 connected to a global communications network, which is depicted as the Internet 35. As will be
17 further disclosed below, the computer 1 contains the hardware, application software, and
18 database with which to operate features of the invention.

19 A telephone system user who is initiating a call, or the "caller", has a telephone, e.g., 55,
20 connected to the public telephone network 51 or is using an analog or digital cellular phone, and
21 has a computer of the traditional type 30 connected to the Internet 35 (also referred to herein as
22 the "public Internet").

23 Another telephone system user who will receive the call, or the "call recipient", has a
24 telephone, e.g., 60, connected to the public telephone network 51 or is using an analog or digital
25 cellular phone.

26 The caller initiates the phone call using their computer 30, accessing an application
27 presented over the public Internet, such application hosted by the computer 1 of the present
28 invention. Upon initiating a phone call, the caller's connection request is validated by the
29 application software logic 40. The application software logic 40 evaluates the call request for
30 validity of syntax and structure, then searches the rules database 45 for records associated with
31 the call recipient's call management settings.

32 If there are no such call management settings for the call recipient, the system can
33 respond based on system, group, or per user default setting to either allow or disallow the call.

1 This provides the flexibility to by default connect all calls that do not associate to a rule, or to by
2 default deny all calls that do not associate to a rule.

3 If the database 45 does contain call management settings for the call recipient, the
4 application logic 40 will evaluate the rules to determine if the caller is authorized to connect
5 with the call recipient at the current time and date. If the caller is authorized by the recipient to
6 connect a recipient phone number, and is furthermore authorized to do so for the current time
7 and date, the application logic 40 will connect the call utilizing the public telephone switch 50.
8 The computer 1 passes the caller and call recipient phone numbers as stored in the database 45
9 to the telephone switch 50 using an application programming interface ("API") appropriate to
10 the service provider or telephone switch manufacturer. The exemplary embodiment of the
11 invention utilizes an API provided by a telephone service provider as an interface to its
12 switching infrastructure 50. The API captures both caller and recipient telephone numbers
13 along with other variables useful for call setup and tracking. The telephone service provider
14 then connects both parties telephones 55 and 60 to a phone call by dialing both numbers and
15 connecting the call upon the parties' answer.

16 In the exemplary embodiment, users utilize an application interface in order to manage
17 their voice communications. This interface is provided to the user via commercially and freely
18 available standard web browsers, using JavaScript enhanced HTML web pages, delivered via
19 HTTP over the public Internet. Application system administration, which is used by the service
20 provider to maintain the system and manage its users, is also delivered via web browser and
21 includes activeX components and Java applets. The user application interface is represented in a
22 system map diagram FIG. 58. FIG. 58 maps the exemplary user web site application, including
23 marketing information pages, service agreements, and membership registration which are not
24 pertinent to the invention but are nonetheless a part of the system. The active part of the web
25 application consists of the pages or screens below the "LOGIN" section in the diagram 1800.
26 These screens provide the capabilities for users to employ the invention according to its design.

27 FIG. 33 is a graphic representation depicting a computer screen that serves as a status
28 and quick override of inbound call management rules in an exemplary embodiment of the
29 invention. As depicted in FIG. 33, the main frame of the screen 1010, presented within a web
30 browser, contains all of the elements "within screen", as do all screens within the application.

31 As depicted in FIG. 33, a screen heading area 1070 contains the screen heading,
32 including a label, such as "Incoming Call Management Status", and contains text explaining the
33 purpose of the screen.

1 Continuing with FIG. 33, the rules area 1075 contains the current time and date and
2 provides the user with interactive fields with which to quickly override any current rule
3 including: disabling the taking of incoming voice calls; enabling the taking of incoming voice
4 calls to a specified phone number; modifying the paying party setting to be the caller or call
5 recipient (according to method discussed in FIG. 20); and ability to cancel a currently active
6 quick override.

7 The statistics area 1080 displays simple call statistics of the current day, including:
8 number of calls processed on current day; last call processed time; caller type of member or
9 non-member for last inbound call; and users phone number the call was sent to.

10 The link area 1085 contains an Internet URL which can be distributed by the user in
11 order that others may call the user without revealing the user phone number and within the
12 constraints set by the user via call management rules. This link area 1085 also contains a
13 function allowing the user to anonymously email the URL to another person.

14 The current activity area 1090 displays all currently active inbound call management
15 rules for the day. The current activity area 1090 includes a line item for each rule containing the
16 time range the rule is in effect, the phone number inbound calls will be sent to, and an indicator
17 of whether the caller or call recipient will be required to pay for the call connect charges. For
18 each displayed rule, The current activity area 1090 also provides the ability to delete the rule or
19 to modify the rule by clicking the appropriate button.

20 The navigation area 1065 contains the navigation for the entire inbound call management
21 rules section. The navigation area comprises buttons and links within the web applications
22 which are activated by clicking on the buttons. For example, as depicted in FIG. 33, the button
23 1015 labeled "CURRENT RULES" links to the current screen 1010. The buttons 1020, 1025,
24 1030, 1035, 1040, 1045, and 1050 respectively are linked to individual screens for each day of
25 the week. These pages establish rules for a perpetual scheduled rule set which is activated by
26 utilizing the URL as presented to the user call recipient in 1085. Button 1055 labeled
27 "OVERRIDE RULES" links to a screen providing a flexible way to schedule overrides to
28 perpetual or expiration based rules. A "SPECIAL RULES" button 1060 takes the user to a
29 screen where expiration based rules can be user-defined.

30 FIG. 34 is a graphic representation of a computer screen that serves as a mechanism to
31 define perpetual call management rules for a specific day of the week in the exemplary
32 embodiment of the invention. The buttons labeled as the seven days of the week Monday
33 through Sunday in 1065 each link as described above to a relevant screen. In the exemplary

1 embodiment, the screens are identical in functionality and only differ in their labeling and the
2 fact that each will contain a display of rules active only on that day of the week. The main
3 frame of the screen 1095, presented within a web browser, contains all of the elements within
4 the screen. As a result of a user utilizing this screen, they will have defined time ranges in
5 which they are willing to receive calls on the specified day of week and associated phone
6 numbers in which to forward calls when calls come within the applicable time ranges.

7 The area 1105 contains a label for the page containing the day of week designation along
8 with instructions on use of the screen.

9 The area 1110 contains a user text input box along with a prompt for the user to enter a
10 "Rule Note" which will be associated with a new rule the user creates for this day of week.

11 The area 1115 provides input boxes for defining a time of day range for the rule being
12 defined. There is also a check box for quickly designating that the user wishes to take calls for
13 the complete 24-hour period.

14 The area 1120 contains user input boxes to capture the phone number where incoming
15 calls are to be forwarded if they are within the valid time range and day of week.

16 The area 1125 provides a shortcut mechanism for the user to copy the rule being created
17 to all weekdays (Monday through Friday) or all 7 days of the week, or otherwise leaving the
18 default selection of applying the rule to just the current day.

19 The area 1130 contains a selection for the user to determine if they, the call recipient,
20 will pay for the connection charges associated with the call or if the caller will be required to
21 pay upon initiating a call to them.

22 The button labeled "ADD RULE" 1135 submits the user input from the screen to the
23 application logic to evaluate the validity of the input and to record the new rule into the database
24 if the input is valid. If the input is not valid, the screen will return a message in area 1105
25 indicating the data errors and prompting the user to correct the problem and resubmit the screen
26 using 1135.

27 FIG. 35 is a graphic representation of a computer screen that serves as a mechanism to
28 override call management rules for a specific date and time range in the exemplary embodiment
29 of the present invention. The screen is important as a quick method to override existing call
30 rules as the user's business or personal plans temporarily change the way they would prefer to
31 handle incoming phone calls. This capability is presented to the user as an "Override Rule".
32 The navigation buttons in area 1065 are consistent with all pages within the inbound call
33 management section.

1 Area 1145 contains a label for the page "Override Rules" along with instructions on use
2 of the screen.

3 The area 1150 contains a user text input box along with a prompt for to enter a "Rule
4 Note" which will be associated with the new override rule the user creates.

5 The area 1155 provides input boxes for defining a date range and time of day range for
6 the override rule being defined.

7 The area 1160 contains user input boxes to capture the phone number where incoming
8 calls are to be forwarded during the override period. The phone number entered here is used
9 instead of numbers entered with the user's call management rules. The area also has a yes or no
10 selection to indicate if the user is going to be accepting calls during the period defined by the
11 override rule. If the user selects "Yes", then validated calls are forwarded to the number the
12 user provides, if "No" is selected inbound calls are rejected during the override period.

13 The area 1165 contains a selection box to indicate if "Special Rules" are to be
14 overridden. "Special Rules" as implemented into the system are rules that have specific date
15 ranges for being active and therefore do not apply on a permanent schedule as do the perpetual
16 rules. Checking this box will override both the perpetual and fixed date range rules.

17 The area 1170 contains a selection for the user to determine if they, the call recipient,
18 will pay for the connection charges associated with the call or if the caller will be required to
19 pay upon initiating a call to them.

20 The button labeled "ADD RULE" 1175 submits the user input from the screen to the
21 application logic to evaluate the validity of the input and to record the new rule into the database
22 if the input is valid. If the input is not valid, the screen will return a message in area 1145
23 indicating the data errors and prompting the user to correct the problem and resubmit the screen
24 using 1175.

25 FIG. 36 is a graphic representation of a computer screen that serves as a mechanism to
26 define fixed date range, expiring call management rules in the exemplary embodiment of the
27 present invention. The button labeled as "SPECIAL RULES" in 1065 link to the screen. The
28 main frame of the screen 1180, presented within a web browser, contains all of the elements
29 within screen. As a result of a user utilizing this screen, they will have defined date and time
30 ranges in which they are willing to receive calls on the specified days of the week and associated
31 phone numbers in which to forward calls when calls come within the applicable date and time
32 ranges.

1 The area 1185 contains a label for the page "Special Rules" along with instructions on
2 use of the screen.

3 The area 1190 contains a user text input box along with a prompt for a user to enter a
4 "Rule Note" which will be associated with a new rule the user creates for this day of week.

5 The area 1195 provides input boxes for defining a date range and time of day range for
6 the rule being defined. There is also a check box for quickly designating that the user wishes to
7 take calls for the complete 24 hour period.

8 The area 1200 contains check boxes for all 7 days of the week. The user selects which
9 days of the week the rule should apply. The date and time range from 1195 will be used in
10 conjunction with the days of week selected to determine when the rule will be applied.

11 The area 1205 contains user input boxes to capture the phone number where incoming
12 calls are to be forwarded if they are within the valid date, time, and day of week range.

13 The area 1210 contains a selection for the user to determine if they, the call recipient,
14 will pay for the connection charges associated with the call or if the caller will be required to
15 pay upon initiating a call to them.

16 The button labeled "ADD RULE" 1215 submits the user input from the screen to the
17 application logic to evaluate the validity of the input and to record the new rule into the database
18 if the input is valid. If the input is not valid, the screen will return a message in area 1185,
19 indicating the data errors and prompting the user to correct the problem and resubmit the screen
20 using 1215.

21 FIG. 59 is a representation of an exemplary database model used by the invention to
22 manage some of the key data elements and their relationships in order to accomplish some of the
23 functionality provided by the invention.

24 In FIG. 2, there is shown an arrangement and apparatus for carrying out an embodiment
25 of the invention. A computer 1 is a computer of the traditional type including ROM, RAM, a
26 processor, etc. is shown connected to a public telephone system switch 10, which is in turn
27 connected to the worldwide public telephone network.

28 A telephone system user who is initiating a call, or the "caller", has a telephone
29 connected to the public telephone network 5 or is using an analog or digital cellular phone.

30 Upon initiating a phone call, the caller's connection request is validated by the telephone
31 switch 10 by passing the call request to the application logic 15 of the computer 1. The
32 application logic 15 evaluates the call request for validity of syntax and structure, then searches
33 the rules database 20 for records associated with the call recipient's call management settings.

1 If there are no such call management settings for the call recipient, the system can
2 respond based on system, group, or per user default setting to either allow or disallow the call.
3 This provides the flexibility to by default connect all calls that do not associated to a rule, or to
4 by default deny all calls that do not associate to a rule.

5 If the database 20 does contain call management settings for the call recipient, the
6 application logic 15 will evaluate the rules to determine if the caller is authorized to connect
7 with the call recipient at the current time and date. If the caller is authorized by the recipient to
8 connect a recipient phone number, and furthermore authorized for the current time and date, the
9 application logic 15 will connect the call utilizing the public telephone switch 10. Depending on
10 the API used with the telephone switch 10, this may be accomplished by returning a call
11 approval code to the switch, or establishing a new call setup sequence as provided by the switch
12 10 API. If the API provides for passing an approval or denial code, the switch can simply
13 connect the call just as it would if it were not interfaced with the invention computer 1. If the
14 switch API does not support the specific functionality required to receive call approval and
15 denial codes from an external system, then a new call can be established such that the original
16 caller connection is terminated and a new call is established to both caller and call recipient
17 phone numbers. As the telephone switch manufacturers and telephone application systems have
18 a varied set APIs available to interface with the telephone switching infrastructure, the actual
19 call connection method will depend on the switching hardware and software utilized in a
20 particular implementation.

21 FIG. 3 is a flowchart of the process in the current embodiment of the invention to
22 connect two parties to a telephone call while keeping the caller and call recipient's phone
23 numbers concealed. The same process could accommodate more than two parties when
24 connecting a three-way or conference call simply by adding the additional callers using the same
25 process. In order to provide a concealed phone number capability to the users, both the caller's
26 65 and the call recipient's 70 telephone numbers must be registered within the application of the
27 invention computer.

28 Upon registering with the application system in the exemplary embodiment, at least one
29 of the users must register as a member of the system by filling out a sign up form designating a
30 choice of the monthly service offering and providing a payment method of credit card or online
31 check. Upon registration, one or both users, depending on their choices to become a member, is
32 able to distribute one or more unique system codes 75. In the exemplary embodiment, the

1 system codes are generated and embedded into an Internet URL which can be used to initiate a
2 call.

3

4 `http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA`
5 `D80D4AA`

6

7 In the example above, each code is a unique identifier generated by a publicly know
8 algorithm referred to as GUID (globally unique identifier). Generation of a GUID is not an
9 object of the invention. The generated GUID is unique; the same GUID will not be generated
10 again.

11 In the example above, the code is the string of alphanumeric characters
12 ("5631EDC86148489C9BFA904CAD80D4AA") appearing after the "=" in the URL. In other
13 embodiments of the invention, the system code could be utilized without the URL, or other
14 forms of a unique identifier could be used as an alternative. For example, a 10 digit numeric
15 string similar to a traditional telephone number could be assigned to a user and this system code
16 could be used as the identifier which references the user's actual telephone number and call
17 management rules associated with it.

18 In the exemplary embodiment, callers may distribute their system code embedded URLs
19 in a variety of ways, which are standard communication methods including but not limited to:
20 email, voice, written, chat, instant messaging, and public or private web sites.

21 Regardless of the method used to distribute the URL, in the exemplary embodiment a
22 potential caller must obtain the URL with embedded system code in order to initiate a telephone
23 call. The caller initiates the telephone call 80 by clicking on the URL in an enabled application
24 or by pasting or typing the URL string into their web browser address box. The URL engages
25 the application system logic of the invention to verify the structure and contents of the URL and
26 to search the application database for the telephone number of the recipient associated with the
27 system code 85. It should be noted that the caller's phone number must also be registered with
28 the application system in order to connect a call. The application system obtains this
29 information from the caller 70 prior to connecting the call.

30 In other embodiments of the invention, the system code processing and call initiation
31 could be handled in a variety of ways. For example, the caller could call a fixed telephone
32 number for a service provider, and then be prompted to enter the call recipient's system code
33 upon which the system would connect the call.

1 The invention uses the telephone numbers for the caller and call recipient stored in its
2 database to connect both parties to a telephone call 90. The connection is accomplished by
3 integrating the invention with a telephone switching device or switching device API. In
4 utilizing the system code method, neither the caller or call recipient is required to reveal their
5 telephone number to the other.

6 FIG. 4 is a flowchart of the process in the exemplary embodiment of the invention to
7 connect two parties to a telephone call after a specified delay time. The caller connects to the
8 application interface of the invention 95 and provides the caller and call recipient telephone
9 numbers, or other connection code as described elsewhere related to the invention, along with
10 the required delay time in hours and minutes 100. In an alternative embodiment, the invention
11 could also accommodate delay times in years, months, and days as well. The application logic
12 validates the user input and stores the connection information in the application database 105
13 and creates an event trigger which will occur upon completion of the delay time. When the
14 delay time has completed the system will connect the caller and call recipient 110. This
15 capability of the invention can be used to quickly schedule and connect phone calls in the future
16 based on a delay as opposed to a fixed date and time.

17 FIG. 5 is a flowchart of the process in the exemplary embodiment of the invention to
18 manage inbound telephone calls to a user such that the call recipient user can control if they may
19 be called, when they are willing to accept phone calls, and who may call them.

20 As depicted in FIG. 5, the call recipient connects to the application interface of the
21 invention 115 and defines one or more rules to be applied as incoming telephone calls are
22 processed. In the exemplary embodiment the rules are associated with a unique system code
23 related to the rules but other embodiments could implement the rules without such requirement
24 by merely associating the rules with the caller and call recipient's telephone numbers.

25 Continuing with FIG. 5, when the caller initiates a call 120, the system of the invention,
26 which is integrated with the telephone switching mechanism, will lookup the target call recipient
27 rules in the application system database 125. In the exemplary embodiment of the invention,
28 initiating the call is accomplished utilizing an Internet URL from a computer of the traditional
29 type connected to the public Internet. Other embodiments of the invention could initiate the call
30 from a traditional telephone, analog or digital cellular phone, or other voice communication
31 enabled device.

32 The call recipient rules are compared to the current general rules they have defined for
33 processing incoming calls or specific rules associated to the caller or source phone number of

1 the call. In the exemplary embodiment of the system, a unique system code embedded within an
2 Internet URL is compared to rules associated with that code to determine if the call should be
3 connected. In either the exemplary or other embodiments of the system, the call recipient's
4 rules are evaluated to determine if the caller is authorized to connect with the call recipient at the
5 current date and time 130. If the rules allow the call to be connected, the system will connect
6 the call 140 utilizing its connection to a telephone switching infrastructure. If the rules dictate
7 that a call is not authorized to be connected, then the call is rejected 135. In the exemplary
8 embodiment of the invention, this rejection is represented to the caller in the form of a message
9 displayed on their web browser screen. Alternative embodiments of the invention may utilize
10 other methods to notify the caller of the rejection, or may not notify the user and rather just not
11 connect the call.

12 FIG. 6 is a flowchart of the process in the exemplary embodiment of the invention to
13 connect two parties to a telephone call at a specific date and time. The caller connects to the
14 application interface of the invention 145 and provides the caller and call recipient telephone
15 numbers, or other connection code as described elsewhere related to the invention, along with
16 the required date and time in hours and minutes 150. In alternative embodiments, the invention
17 could also accommodate time in more precise terms such as seconds or fractions of a second.
18 The application logic validates the user input and stores the connection information in the
19 application database 155 and creates an event trigger which will occur upon reaching the date
20 and time specified. When the date and time has been reached the system will connect the caller
21 and call recipient 160. This capability of the invention can be used to quickly schedule and
22 connect phone calls in the future based on a fixed date and time.

23 FIG. 7 is a flowchart of the process in an embodiment of the invention to connect two
24 parties to a telephone call at according to a recurring schedule. The caller connects to the
25 application interface of the invention 165 and provides the caller and call recipient telephone
26 numbers, or other connection code as described elsewhere related to the invention, along with
27 the required recurring schedule definition 170. The scheduled day could be represented as
28 specific days of the year (example every March 1st, or every year on the 35th day of the year),
29 days of the month (example the 15th of every month, the first Tuesday of every month), days of
30 a week (example every Tuesday). The scheduled time would be represented in hours and
31 minutes or if necessary, in more precise terms such as seconds or fractions of a second. The
32 application logic validates the user input and stores the connection information in the application
33 database 175 and creates an event trigger which will occur upon reaching the first occurrence of

1 the date and time as specified in the schedule. When the date and time has been reached the
2 system will connect the caller and call recipient 180. The system would use either a perpetual
3 event trigger or submit a new trigger for the next scheduled call for each instance. This
4 capability of the invention can be used to quickly schedule and connect phone calls in the future
5 based on a recurring call schedule.

6 FIG. 8 is a flowchart of the process in the exemplary embodiment of the invention to
7 create a unique system identification code related to a telephone number which may be used as
8 an alternative mechanism to initiate telephone calls. The call recipient connects to the
9 application interface of the invention 185 and registers their telephone number as the target for
10 an incoming call. The system generates a unique identification code ("system code") 190 which
11 is associated with the call recipient's telephone number and stored in the system database 195.

12 The code generated in the exemplary embodiment of the invention is a guaranteed
13 globally unique identifier (GUID) which can only be generated once. The GUID is created
14 using a publicly available algorithm which is not an object of the invention. Other embodiments
15 of the invention could use any of a number of methods to establish a unique system code,
16 including random number generation, selection from a fixed grouping of numeric,
17 alphanumeric, or extended character set codes, or sequential numeric code generation to name a
18 few. Other embodiments could also employ any number of minimum and maximum allowable
19 characters as required for a particular implementation. One example would be to utilize a 10
20 digit numeric code, similar to a traditional telephone number, which could be used as an
21 alternative method to identify a target call recipient when placing a call utilizing the invention.

22 In the exemplary embodiment of the invention, this system code is embedded into an
23 Internet URL and presented to the user 200. This embedded URL can be used by callers to
24 initiate a call to the call recipient without revealing the recipient's telephone number 205. Other
25 embodiments of the invention could utilize a variety of methods for collecting the code from a
26 caller in order to connect a call to the call recipient. As an example, an alternate embodiment
27 could prompt a caller to enter the system code from their telephone using the touch tone keypad
28 and then utilize the code to determine the call recipient telephone number and connect the call.

29 FIG. 9 is a flowchart of the process in the exemplary embodiment of the invention to
30 manage incoming voice messages to a user such that the voice message recipient can control if
31 they may be messaged, when they are willing to accept voice messages, and who may leave
32 messages for them. The voice message recipient connects to the application interface of the
33 invention 210 and defines one or more rules to be applied as incoming voice messages are

1 processed and to enter the target telephone number and extension or voice mailbox ID for their
2 voice mail system. In the exemplary embodiment the rules are associated with a unique system
3 code related to the rules but other embodiments could implement the rules without such
4 requirement by merely associating the rules with the caller telephone number and recipient's
5 voice mail numbers.

6 When the caller initiates a call 215, the system of the invention which is integrated with
7 the telephone switching mechanism will lookup the target voice mail recipient rules in the
8 application system database 220. In the exemplary embodiment of the invention, initiating the
9 call is accomplished utilizing an Internet URL from a computer of the traditional type connected
10 to the public Internet. Other embodiments of the invention could initiate the call from a
11 traditional telephone, analog or digital cellular phone, or other voice communication enabled
12 device.

13 The call recipient rules are compared to the current general rules they have defined for
14 processing incoming voice message calls or specific rules associated to the caller or source
15 phone number of the call. In the exemplary embodiment of the system, a unique system code
16 embedded within an Internet URL is compared to rules associated with that code to determine if
17 the call should be connected. In either the exemplary or alternative embodiments of the system,
18 the voice message recipient's rules are evaluated to determine if the caller is authorized to
19 connect with the call recipient's voice mail system at the current date and time 225. If the rules
20 allow the call to be connected, the system will connect the call to the recipient's voice message
21 system 235 utilizing its connection to a telephone switching infrastructure. If the rules dictate
22 that a call is not authorized to be connected, then the call is rejected 230. In the exemplary
23 embodiment of the invention, this rejection is represented to the caller in the form of a message
24 displayed on their web browser screen. Other embodiments of the invention may utilize other
25 methods to notify the caller of the rejection, or may not notify the user and rather just not
26 connect the call.

27 FIG. 10 is a flowchart of the process in the exemplary embodiment of the invention to
28 connect a caller to a voice message recipient's voice message system while keeping the message
29 recipient's voice message system phone numbers and extension or voice mailbox ID concealed.
30 In order to provide a concealed voice message system phone number capability to the message
31 recipient, the recipient's voice message telephone number and extension or voice mailbox ID
32 must be registered within the application of the invention computer 240.

1 Upon registering with the application system in the exemplary embodiment, at least one
2 of the users must register as a member of the system by filling out a sign up form designating a
3 choice of the monthly service offering and providing a payment method of credit card or online
4 check. Upon registration, one or both users, depending on their choices to become a member, is
5 able to distribute one or more unique system codes 245. In the exemplary embodiment, the
6 system codes are generated and embedded into an Internet URL which can be used to initiate a
7 voice message call.

8
9 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
10 D80D4AA

11
12 Each code is a unique identifier generated by a publicly know algorithm referred to as
13 GUID or globally unique identifier, which is not an object of the invention, that cannot be
14 generated again. In the example above, the code is the string of alphanumeric characters
15 appearing after the "=" in the URL. In other embodiments of the invention, the code could be
16 utilized without the URL, or other forms of a unique identifier could be used as an alternative.
17 For example, a 10 digit numeric string similar to a traditional telephone number could be
18 assigned to a user and this system code could be used as the identifier which references the
19 user's actual voice message system telephone number and call management rules associated
20 with it.

21 In the exemplary embodiment, callers may distribute their system code embedded URLs
22 in a variety of ways, which are standard communication methods including but not limited to:
23 email, voice, written, chat, instant messaging, and public or private web sites.

24 Regardless of the method used to distribute the URL, in the exemplary embodiment a
25 potential caller must obtain the URL with embedded system code in order to initiate a voice
26 message call. The caller initiates the voice message telephone call 250 by clicking on the URL
27 in an enabled application or by pasting or typing the URL string into their web browser address
28 box. The URL engages the application system logic of the invention to verify the structure and
29 contents of the URL and to search the application database for the telephone number of the
30 recipient voice mail system associated with the system code 255. It should be noted that the
31 caller's telephone number must also be registered with the application system in order to
32 connect a the voice message call in the exemplary embodiment. The application system obtains
33 this information from the caller prior to connecting the call.

1 In alternative embodiments, the caller would not need to specifically register their phone
2 number if the embodiment simply connected the call through to the voice message system from
3 the caller's telephone. System code processing and call initiation could also be handled in a
4 variety of ways. For example, the caller could call a fixed telephone number for a service
5 provider, and then be prompted to enter the call recipient's system code upon which the system
6 would connect the call to the recipient's voice mail system.

7 Continuing with FIG. 10, the invention uses the telephone numbers for the caller and
8 voice message recipient's voicemail system stored in its database to connect the calling party to
9 the receiving voice message system 260. The connection is accomplished by integrating the
10 invention with a telephone switching device or switching device API. In utilizing the system
11 code method, the voice message recipient is not required to reveal their voice message system
12 telephone number to the calling party.

13 FIG. 11 is a flowchart of the process in an embodiment of the invention to manage
14 incoming instant messages to a user such that the message recipient can control if they may be
15 messaged, when they are willing to accept messages, and who may leave messages for them.

16 In the exemplary embodiment of the invention, integration with an existing instant
17 messaging system would be required. Examples of such systems include: AOL's Instant
18 Messenger (AIM), Microsoft's MSN Messenger, and ICQ. The invention is designed to
19 augment these types of existing applications' features with its communication management
20 capabilities. API integration or direct code integration between the invention and these
21 messaging systems would be required or a new instant message system could be created
22 utilizing the invention as an embedded component.

23 As depicted in FIG. 11, the voice message recipient connects to the application interface
24 of the invention 265 and define one or more rules to be applied as incoming instant messages are
25 processed and to enter the target instant message system ID for their account on the instant
26 message system. When the message sender initiates an instant message from their instant
27 messaging software client 270, the system of the invention which is integrated with the instant
28 messaging application will lookup the recipient rules in the application system database 275.

29 Continuing with FIG. 11, the message recipient rules are compared to the current general
30 rules they have defined for processing incoming instant messages or specific rules associated to
31 the sender. The message recipient's rules are evaluated to determine if the sender is authorized
32 to send a message to the message recipient's instant messaging client at the current date and
33 time 280. If the rules allow the message to be sent, the system will permit the message to be

1 forwarded to the recipient's instant message client 290 utilizing its integration with an instant
2 message application. If the rules dictate that a message is not authorized to be sent, then the
3 message is rejected 285. The embodiment of the invention may utilize any method to notify the
4 sender of the rejection, or may not notify the user and rather just not send the message.

5 FIG. 12 is a flowchart of the process in an embodiment of the invention to manage
6 incoming electronic ("email") messages to a user such that the message recipient can control if
7 they may be messaged, when they are willing to accept messages, and who may leave messages
8 for them.

9 In the exemplary embodiment of the invention, integration with an existing email
10 messaging system would be required. This integration could consist of an embedding of the
11 invention into the email application client or server application, integration via API with the
12 client or server application, or configuring the invention as a mail forwarding server for
13 processing messages prior to their delivery to the recipient's email server.

14 Continuing with FIG. 12, the email message recipient is required to connect to the
15 application interface of the invention 295 and define one or more rules to be applied as
16 incoming email messages are processed and to enter the target email address for their email
17 system account. When the message sender initiates an email message from their email
18 messaging software client 300 either 1) the recipient's email client software which is integrated
19 with the invention or 2) the recipient's email server application which is integrated with the
20 invention or 3) the invention configured as a forwarding server between the recipient's email
21 server and the public Internet or private network will lookup the recipient rules in the
22 invention's application system database 305.

23 Continuing with FIG. 12, the message recipient rules are compared to the current general
24 rules they have defined for processing incoming email messages or specific rules associated to
25 the sender. The message recipient's rules are evaluated to determine if the sender is authorized
26 to send a message to the message recipient's email system at the current date and time 310. If
27 the rules allow the message to be sent, the system will permit the message to be forwarded to the
28 recipient's email software 320 utilizing its integration or forwarding configuration with the
29 email server application. If the rules dictate that a message is not authorized to be sent, then the
30 message is rejected 315. The embodiment of the invention may utilize any method to notify the
31 sender of the rejection, including returning a delivery failure notice, or may not notify the user
32 and rather just not send the message.

1 FIG. 13 is a flowchart of the process in the exemplary embodiment of the invention to
2 create and utilize unique Internet URLs which can be used to initiate rules-managed telephone
3 calls when embedded into Internet objects and applications. The call recipient information
4 including target phone number is required to be entered into the application interface of the
5 invention or otherwise loaded into the application via file or data transfer 325 where it is
6 validated and stored in the application database 330. The system generates a unique
7 identification code ("system code") 335 which is associated with the call recipient's telephone
8 number and stored in the system database 340.

9 The code generated in the exemplary embodiment of the invention is a guaranteed
10 globally unique identifier (GUID) which can only be generated once. The GUID is created
11 using a publicly available algorithm which is not an object of the invention. Other embodiments
12 of the invention could use any of a number of methods to establish a unique system code,
13 including random number generation, selection from a fixed grouping of numeric,
14 alphanumeric, or extended character set codes, or sequential numeric code generation to name a
15 few. Other embodiments could also employ any number of minimum and maximum allowable
16 characters as required for a particular implementation.

17 In the exemplary embodiment of the invention, this system code is embedded into an
18 Internet URL and presented to the user 345 where it may be utilized in a wide variety of Internet
19 or private network objects or applications. The URL is then distributed as necessary 350 to
20 appropriate software developers, HTML or graphics developers, or other content creators and
21 managers responsible for the creation, modification, and management of Internet objects, and
22 software applications.

23 Objects and applications include graphics with embedded links, client and server side
24 programs and scripts, HTML links, user interface elements which allow for embedding of a
25 URL, COM or CORBA distributed application objects, or stand alone compiled programs. The
26 appropriate content or application creator or manager must embed the URL 355 into the target
27 object or application and in certain cases create logic appropriate to the use to support the
28 URL's activation.

29 The object or application activates the URL 360 by doing an HTTP call to the URL
30 address, which connects to the computer of the invention 365. The ability to utilize an HTTP
31 request to a URL and interpret return results is available on all of the common computer
32 hardware and software platforms and Internet applications either as a native capability or as an

1 add-on component or readily creatable by a programmer using simple network input and output
2 routines built into application development tools.

3 Upon activation of the URL, the computer of the invention evaluates the URL 370 for
4 validity of syntax and structure, and if valid retrieves rules in the database which are related to
5 the system code embedded into the URL. If the call management rules related to the URL are
6 valid for the current date and time, the call is connected 375 by the invention utilizing its
7 integration with a telephone switching application or device. If the rules for the URL are not
8 valid for the current date and time, the call is not connected and a message is returned to either
9 the end user or the calling object or application via HTTP response formatted with HTML.

10 FIG. 14 is a flowchart of the process in an embodiment of the invention to connect two
11 or more parties to a telephone conference call at a specific date and time. As depicted in FIG.
12 14, a call administrator connects to the application interface of the invention 380 and provides
13 the target conference service telephone number and conference extension if required and
14 conference participant telephone numbers, or other connection code as described elsewhere
15 related to the invention, along with the required date and time in hours and minutes 385. The
16 invention could also accommodate time in more precise terms such as seconds or fractions of a
17 second. The application logic validates the user input and stores the connection information in
18 the application database 390 and creates an event trigger which will occur upon reaching the
19 date and time specified. When the date and time has been reached the system will connect the
20 conference participants to the conference service telephone number 395. This capability of the
21 invention can be used to quickly schedule conference phone calls in the future based on a fixed
22 date and time. It may also be similarly to schedule conference calls on a recurring schedule.

23 FIG. 15 is a flowchart of the process in the exemplary embodiment of the invention to
24 connect parties to a telephone party line call utilizing rules to control party line access and
25 keeping the party line phone number concealed. In the exemplary embodiment, in order to
26 provide the party line with rules-based access control and conceal the party line phone number,
27 the party line telephone number must be registered 400 within the application of the invention
28 computer. A party line administrator has the option to create a rule set and a single Internet
29 URL for distribution to callers or to create multiple rule sets and associated URLs for
30 distribution to individual callers or groups of callers. In either case the system generates one or
31 more unique system codes 405 related to the party line phone number and rule set, and creates
32 one or more URLs 410 with the embedded system code.

1 The party line administrator is able to distribute one or more of the URLs 415 using any
2 appropriate method. In the exemplary embodiment, callers may distribute their system code
3 embedded URLs in a variety of ways, which are standard communication methods including but
4 not limited to: email, voice, written, chat, instant messaging, and public or private web sites.
5 An example of a URL generated by the exemplary invention is below.

6
7 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
8 D80D4AA

9
10 Each code is a unique identifier generated by a publicly know algorithm referred to as
11 GUID or globally unique identifier, which is not an object of the invention, that cannot be
12 generated again. In the example above, the code is the string of alphanumeric characters
13 appearing after the "=" in the URL. In other embodiments of the invention, the code could be
14 utilized without the URL, or other forms of a unique identifier could be used as an alternative.
15 For example, a 10 digit numeric string similar to a traditional telephone number could be
16 assigned to a user and this system code could be used as the identifier which references the
17 user's actual telephone number and call management rules associated with it.

18 Regardless of the method used to distribute the URL, in the exemplary embodiment a
19 potential caller must obtain the URL with embedded system code in order to initiate a party line
20 telephone call. The caller initiates the telephone call 420 by clicking on the URL in an enabled
21 application or by pasting or typing the URL string into their web browser address box. The
22 URL engages the application system logic 425 of the invention to verify the structure and
23 contents of the URL and to search the application database for the telephone number of the party
24 line and associated rules sets which related to the system code in the URL. It should be noted
25 that in the exemplary embodiment of the invention, the caller's phone number must also be
26 registered with the application system in order to connect a call. The application system obtains
27 this information from the caller 420 prior to connecting the call.

28 In alternative embodiments of the invention, the system code processing and call
29 initiation could be handled in a variety of ways. For example, the caller could call a fixed
30 telephone number for a service provider, and then be prompted to enter the party line's system
31 code upon which the system would connect the call.

32 The invention uses the telephone numbers for the caller and party line stored in its
33 database to connect both parties to a telephone call 430 if the rules associated with the system

1 code allow for the connection. The connection is accomplished by the invention's integration
2 with a telephone switching device API.

3 FIG. 16 represents an exemplary embodiment of the invention in which cellular
4 telephones use wireless application protocol (WAP) or cellular web browsers to initiate rules-
5 managed and/or concealed recipient phone number calls using a computer for managing
6 communications that is connected to a traditional telephone network and to the public Internet.

7 A cellular telephone system user who is initiating a call, or the "caller", has a cellular
8 service which supports connecting to Internet based web sites and applications via WAP or an
9 web browser implemented into the cell phone 435.

10 The cellular network is integrated with the public Internet 440 via any functional
11 arrangement such that any standard WAP or Internet web application can be accessed by the
12 cellular user via their compatible cell phone 435.

13 Another telephone system user who will receive the call, or the "call recipient", has a
14 telephone connected to the public telephone network 461 or is using an analog or digital cellular
15 phone 460.

16 The caller initiates the phone call using their cellular phone 435, accessing either a WAP
17 or appropriately formatted web application presented over the public Internet, such application
18 hosted by the invention computer 1. The application presents the caller the ability to select from
19 an existing contact listing to initiate a call, to input a system code or URL for a recipient's rules
20 based call management, or to input a telephone number for the recipient.

21 Upon initiating a phone call, the caller's connection request is validated by the
22 application logic 445. The logic evaluates the call request for validity of syntax and structure,
23 then searches the rules database 450 for records associated with the call recipient's call
24 management settings if any exist. Note that the call recipient need not be a user of or know to
25 the system unless a system code of the invention is the method used to connect with the
26 recipient.

27 If there are no user or system rules preventing the connection, the application logic 445
28 will connect the call utilizing the public telephone switch 455. The computer 1 passes the caller
29 and call recipient phone numbers as stored in the database 450 to the telephone switch 455 using
30 an application programming interface ("API") appropriate to the service provider or telephone
31 switch manufacturer. The telephone switch then connects both parties' telephones 435, 460 or
32 461 to a phone call by dialing both numbers and connecting the call upon the parties' answer.

1 FIG. 17 is a flowchart of the process in an embodiment of the invention to connect a
2 cellular phone caller to a call recipient's telephone while keeping the call recipient's phone
3 number concealed. In the exemplary embodiment of the invention depicted in FIG. 17, in order
4 to provide a concealed phone number capability to the call recipient, the telephone number must
5 be registered within the application of the invention computer 465. Upon registration, the
6 system generates 470 and stores one or more unique system codes associated with the call
7 recipient's telephone number. The system presents one or more unique system codes in either a
8 URL form (example below) or as a code to be used in other user interface methods with the
9 invention 475. The system code and/or URL is stored 480 in the database along with the
10 associated call recipient telephone number.

11

12 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
13 D80D4AA

14

15 Each code is a unique identifier generated by a publicly know algorithm referred to as
16 GUID or globally unique identifier, which is not an object of the invention, that cannot be
17 generated again. In the example above, the code is the string of alphanumeric characters
18 appearing after the "=" in the URL. In other embodiments of the invention, the code could be
19 utilized without the URL, or other forms of a unique identifier could be used as an alternative.
20 For example, a 10 digit numeric string similar to a traditional telephone number could be
21 assigned to a user and this system code could be used as the identifier which references the
22 user's actual voice message system telephone number and call management rules associated
23 with it.

24 Call recipients may distribute their system code in a variety of ways, which are standard
25 communication methods including but not limited to: email, voice, written, chat, instant
26 messaging, and public or private web sites.

27 Continuing with FIG. 17, the caller initiates the telephone call 490 by: 1) selecting a
28 contact name using their WAP or web browsing enabled cell phone; 2) entering the system
29 code of the call recipient using their WAP or web browsing enabled cell phone; 3) clicking on
30 the URL in an enabled application or by pasting or typing the URL string into their cell phone
31 web browser address box; 4) clicking on the URL in an enabled application or by pasting or
32 typing the URL string into their cell phone web browser address box; or 5) entering the system

1 code of the call recipient using computer web browser while accessing the application of the
2 invention computer.

3 Either method of initiation engages the application system logic 495 of the invention to
4 verify the structure and contents of the URL and to search the application database for the
5 telephone number of the recipient associated with the system code 500.

6 The embodiment could be implemented such that the call could be processed and
7 connected immediately upon initiation of the system logic 495. Otherwise the caller would be
8 required to specifically register their phone number with the application and a call connection
9 process would connect both the caller and call recipient. System code processing and call
10 initiation could also be handled in a variety of ways. For example, the caller could call a fixed
11 telephone number for a service provider, and then be prompted to enter the call recipient's
12 system code upon which the system would connect the call to the recipient's voice mail system.

13 The invention uses the telephone numbers for the caller and call recipient stored in its
14 database to connect the call 500. The connection is accomplished by integrating the invention
15 with a telephone switching device or switching device API. In utilizing the system code
16 method, the call recipient is not required to reveal their telephone number to the calling party
17 cell phone user.

18 FIG. 18 is a flowchart of the process in an exemplary embodiment of the invention to
19 manage incoming pager messages to a user such that the message recipient can control if they
20 may be messaged, when they are willing to accept messages, and who may leave messages for
21 them.

22 In the exemplary embodiment of the invention depicted in FIG. 18, integration with
23 existing paging services is required. Several alternatives exist for such integration, the selection
24 of which will depend on technical and functionality considerations, the most important being the
25 desired input methods for pages being sent to recipients. Many paging systems allow page
26 messages to originate: from an automated or operator assisted call center, from an email
27 message, from a web page on the public Internet, from a paging application utilizing an Internet
28 connection or modem to connect to the paging service, from another paging device equipped
29 with two-way paging capability, or from an API allowing any variety of independent software
30 applications to send a pager message. Either input method would require the invention to be
31 integrated with or embedded into the application or device originating the message.

32 Continuing with FIG. 18, the voice message recipient is required to connect to the
33 application interface of the invention 505 and define one or more rules to be applied as

1 incoming instant messages are processed and to enter the target instant message system ID for
2 their account on the instant message system. When the message sender initiates a pager
3 message utilizing any of the methods above or others not noted 510, the system of the invention
4 which is integrated with the paging system application will lookup the recipient rules in the
5 application system database 515.

6 The message recipient rules are compared to the current general rules they have defined
7 for processing incoming paging messages or specific rules associated to the sender. The
8 message recipient's rules are evaluated to determine if the sender is authorized to send a
9 message to the message recipient's pager at the current date and time 520. If the rules allow the
10 message to be sent, the system will permit the message to be forwarded to the recipient's pager
11 530 utilizing its integration with a pager system application. If the rules dictate that a message
12 is not authorized to be sent, then the message is rejected 525. The embodiment of the invention
13 may utilize any method to notify the sender of the rejection, or may not notify the user and
14 rather just not send the message.

15 FIG. 19 is a flowchart of the process in the exemplary embodiment of the invention to
16 connect a caller to a pager message recipient's telephone message system while keeping the
17 message recipient's paging service message system phone number and extension or PIN
18 concealed. In the exemplary embodiment of the invention, in order to provide a concealed
19 paging message system phone number capability to the message recipient, the recipient's paging
20 system telephone number and extension or PIN must be registered within the application of the
21 invention computer 535.

22 Upon registering with the application system in the exemplary embodiment, at least the
23 pager recipient must register as a member of the system by filling out a sign up form designating
24 a choice of the monthly service offering and providing a payment method of credit card or
25 online check. Upon registration, one or both users, depending on their choices to become a
26 member, is able to distribute one or more unique system codes 540. In the exemplary
27 embodiment, the system codes are generated and embedded into an Internet URL which can be
28 used to initiate a paging system call.

29

30 <http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA>
31 D80D4AA

32

1 Each code is a unique identifier generated by a publicly know algorithm referred to as
2 GUID or globally unique identifier, which is not an object of the invention, that cannot be
3 generated again. In the example above, the code is the string of alphanumeric characters
4 appearing after the "=" in the URL. In other embodiments of the invention, the code could be
5 utilized without the URL, or other forms of a unique identifier could be used as an alternative.
6 For example, a 10 digit numeric string similar to a traditional telephone number could be
7 assigned to a user and this system code could be used as the identifier which references the
8 user's actual paging system telephone number and call management rules associated with it.

9 In the exemplary embodiment, callers may distribute their system code embedded URLs
10 in a variety of ways, which are standard communication methods including but not limited to:
11 email, voice, written, chat, instant messaging, and public or private web sites.

12 Regardless of the method used to distribute the URL, in the exemplary embodiment a
13 potential caller must obtain the URL with embedded system code in order to initiate a voice
14 message call. The caller initiates the voice message telephone call 545 by clicking on the URL
15 in an enabled application or by pasting or typing the URL string into their web browser address
16 box. The URL engages the application system logic of the invention to verify the structure and
17 contents of the URL and to search the application database for the telephone number of the
18 recipient paging system associated with the system code 550. It should be noted that the caller's
19 telephone number must also be registered with the application system in order to connect the
20 paging system call in the exemplary embodiment. The application system obtains this
21 information from the caller prior to connecting the call 545.

22 Alternative embodiments would not require the caller to specifically register their phone
23 number if the embodiment connects the call through to the voice message system from the
24 caller's telephone. System code processing and call initiation could also be handled in a variety
25 of ways. For example, the caller could call a fixed telephone number for a service provider, and
26 then be prompted to enter the call recipient's system code upon which the system would connect
27 the call to the recipient's paging system.

28 The invention uses the telephone numbers for the caller and pager message recipient's
29 paging system stored in its database to connect the calling party to the receiving paging message
30 system 555. The connection is accomplished by integrating the invention with a telephone
31 switching device or switching device API. In utilizing the system code method, the pager
32 message recipient is not required to reveal their paging system message system telephone
33 number or PIN to the calling party.

1 FIG. 20 is a flowchart of the process in the exemplary embodiment of the invention to
2 provide telephone callers and call recipients the ability to make choices as to who will pay for a
3 metered telephone call. Other embodiments of the invention could provide the same choices for
4 fixed rate telephone calls. In the exemplary embodiment, in order to utilize the call payment
5 options, at least the call recipient must be registered with the application system of the
6 invention. The call recipient is given a choice upon defining call management rules as to
7 whether they are willing to pay for incoming calls related to a rule set and system code. In the
8 exemplary embodiment, if the caller is also registered with the application system, no further
9 options are offered to either caller but other embodiments of the invention could offer other
10 variations and priorities for payments if the payment preferences for both users are entered into
11 the system. For example, another embodiment could allow for more varied call payment
12 preferences such as: user A would prefer not to pay for calls from user B but will do so if user
13 B opts not to pay for a call.

14 In the exemplary embodiment of the invention, the payment option that is related to a
15 rule set is activated upon the caller utilizing a system code embedded URL to initiate a call 560.
16 The URL engages the application system logic of the invention to verify the structure and
17 contents of the URL and to search the application database for the telephone number of the
18 recipient associated with the system code along with the payment setting for the rule associated
19 with the system code embedded in the link 565.

20 The system logic determines if the call recipient is willing to pay for the call 570. If the
21 recipient is willing to pay 580, the call is immediately connected 585 and the recipient's account
22 is charged for the metered call usage. If the recipient is unwilling to pay for the call according
23 to the payment options defined with the rule set for the system code, the caller is presented with
24 a message indicating the requirement to pay and a billing option payment screen to enter billing
25 information. If the caller enters valid billing information 575, the call is initiated 585 and the
26 caller's billing method is utilized for payment. If the caller chooses not to enter valid payment
27 information and initiate the call, no call is connected and no billing transaction takes place.

28 The recipient may be billed electronically by credit card, online check, or have a terms-
29 based monthly billing cycle. Other embodiments could use alternate payment methods such as,
30 but not limited to: user's telephone service bill, ACH transactions, wire transfers, or Internet
31 payment options such as PayPal or Billpoint.

1 FIG. 21 represents an embodiment of the invention whereas the capability is provided
2 for Interactive Television (ITV) systems to initiate rules-managed and concealed phone number
3 calls as provided by a computer 1 for managing communications.

4 The computer 1 is a computer of the traditional type including ROM, RAM, a processor,
5 etc. is shown connected to a public telephone system switch 620, which is in turn connected to
6 the worldwide public telephone network. The computer is also connected to the public Internet
7 or a private ITV network 605. The computer contains the hardware, application software, and
8 database required to operate the invention.

9 An ITV user utilizes hardware typically consisting of a television 595, a remote control
10 or other input device 590, and an ITV control system 600 connected to an ITV service provider
11 network 605. The ITV control system 600 may be a self-contained unit or embedded into the
12 television, a computing device, or gaming device connected to the television 595.

13 The ITV service provider network can be a completely closed system, a private system
14 integrated via gateway to the Internet, or a completely Internet carried system. The service
15 provider's implementation choices will impact the integration process with an ITV network. If
16 the ITV network is implemented with Internet capabilities offering support for standard URL
17 linking within its ITV applications then integration is not required. Alternately, if an API exists
18 for Internet enabled ITV applications on the network it would be required to integrate the
19 invention with that API. Finally, if the system is a closed network, the invention would be
20 required to be directly integrated with the ITV system application. The ITV industry appears to
21 be embracing Internet enabled ITV infrastructures in an effort to leverage the pervasiveness of
22 the public Internet. In any case, the invention must be integrated or able to be reached using
23 standard Internet URLs in order to satisfy the requirements of the embodiment.

24 As an ITV user views ITV enhanced programming or other capabilities such as
25 computing or gaming utilizing the ITV hardware which has been integrated with the invention,
26 the programming or other ITV application could allow for the connecting of a call to the user's
27 telephone 625 upon the user viewing enabled content, taking a certain action with the remote
28 control device or other input device 590, or specifically requesting the call utilizing the remote
29 control or other input device 590.

30 The invention will require the ITV user's telephone 625 number and a target telephone
31 630 number to connect a second party. These telephones may be wired to the traditional
32 telephone network or be of the wireless cellular type. The phone number for the second party
33 will be required to be either 1) stored in the invention database 615 along with any other call

1 management rules or, 2) passed to the invention by the ITV application at the time a call is
2 initiated. The phone number for the ITV user may be 1) collected from the user via ITV remote
3 control or other input device 590 at the time of the call, 2) stored in the invention database 615,
4 or 3) passed to the invention by the ITV application at the time a call is initiated.

5 At the initiation of a call, the ITV application system will connect to the invention via
6 the public Internet or a custom connection to a private ITV network 605. The application logic
7 610 will evaluate the caller's connection request. The application logic 610 evaluates the call
8 request for validity of syntax and structure, then searches the rules database 615 for records
9 associated with the call recipient's call management settings.

10 If there are no such call management settings for the call recipient, the system can
11 respond based on system, group, or per user default setting to either allow or disallow the call.
12 This provides the flexibility to by default connect all calls that do not associate to a rule, or to by
13 default deny all calls that do not associate to a rule.

14 If the database 615 does contain call management settings for the call recipient, the
15 application logic 610 will evaluate the rules to determine if the caller is authorized to connect
16 with the call recipient at the current time and date. If the caller is authorized by the recipient to
17 connect a recipient phone number, and furthermore authorized for the current time and date, the
18 application logic 610 will connect the call utilizing the public telephone switch 620. The
19 computer 1 passes the caller and call recipient phone numbers as stored in the database 615 to
20 the telephone switch 620 using an application programming interface ("API") appropriate to the
21 service provider or telephone switch manufacturer. The telephone service provider then
22 connects the ITV user telephone 625 to a call with the recipient telephone 630 by dialing both
23 numbers and connecting the call upon the parties' answer.

24 FIG. 22 represents an embodiment of the invention whereas the capability is provided
25 for satellite television systems to initiate rules-managed and concealed phone number calls as
26 provided by a computer for managing communications 1.

27 A computer 1 is a computer of the traditional type including ROM, RAM, a processor,
28 etc. is shown connected to a public telephone system switch 670, which is in turn connected to
29 the worldwide public telephone network. The computer is also connected to the public Internet
30 or a private satellite network 655. The computer contains the hardware, application software,
31 and database required to operate the invention.

32 A satellite television user utilizes hardware typically consisting of a television 640, a
33 remote control device 635, and a satellite control system 645 connected to a satellite dish. Some

1 satellite systems also connect the control system 645 to a telephone line in order to order pay per
2 view programming. The satellite control system 645 may be a self contained unit or embedded
3 into the television, a computing device, or gaming device connected to the television 640.

4 Three methods of placing calls are conceived in this embodiment. The first method
5 would consist of integrating with the embedded software application that operates the control
6 system 645, and utilizing the built in modem contained in standard DSS type satellite systems to
7 connect with the standard telephone network, dial a telephone connecting to either dedicated
8 modems connected with the invention, or to a standard Internet ISP. In either case, a simple
9 character based login procedure would be executed to authenticate the satellite account, and a
10 uniquely assigned system code would be passed to identify the account associated with the
11 control system 645. Call parameters would then be passed to the invention in either a simple
12 character transmission, or via other standard TCP/IP or Internet protocol such as an HTTP
13 request to a URL as implemented in the exemplary embodiment. The software application of
14 the satellite control system 645 would require modification to support this first connection
15 method. The invention would support users with multiple control systems 645 in their homes,
16 offices, or simultaneous multiple locations by storing unlimited system codes in association with
17 the account.

18 The second method of placing calls would consist of utilizing two-way Internet
19 functionality supported by certain satellite systems 650 and 655. Calls could be placed using a
20 standard computer connected to the satellite system, connecting to the invention as in the
21 exemplary embodiment to interact with the application via a web browser and utilizing the
22 ability to originate a call from the invention. Calls could also be placed utilizing the user
23 interface mechanisms supported by the control system 645 and its remote control device 635.
24 The control system application would have to be enhanced to support the initiation of phone
25 calls from the control system 645 on screen menus, and if phone call origination related to
26 satellite programming is required, the programming would need to be encoded with destination
27 telephone numbers and the control system application enhanced to capture the encoded data and
28 utilize it based on the satellite user's actions with the remote control device 635.

29 The third method of placing calls would consist of integrating with the ITV application
30 system the functionality supported by certain satellite systems in an arrangement and method as
31 discussed in FIGS. 21 and 22.

32 The invention will require the satellite user's telephone 675 number and a target
33 telephone 680 number to connect a second party. These telephones may be wired to the

1 traditional telephone network or be of the wireless cellular type. The phone number for the
2 second party will be required to be either 1) stored in the invention database 665 along with any
3 other call management rules or, 2) passed to the invention by the satellite application at the time
4 a call is initiated. The phone number for the satellite user may be 1) collected from the user via
5 satellite remote control device 635 at the time of the call, 2) stored in the invention database
6 665, or 3) passed to the invention by the satellite application at the time a call is initiated.

7 At the initiation of a call, the satellite application system will connect to the invention
8 via the public Internet or a custom connection to a private satellite network 655. The application
9 logic 660 will evaluate the call connection request. The application logic 660 evaluates the call
10 request for validity of syntax and structure, then searches the rules database 665 for records
11 associated with the call recipient's call management settings.

12 If there are no such call management settings for the call recipient, the system can
13 respond based on system, group, or per user default setting to either allow or disallow the call.
14 This provides the flexibility to by default connect all calls that do not associate to a rule, or to by
15 default deny all calls that do not associate to a rule.

16 If the database 665 does contain call management settings for the call recipient, the
17 application logic 660 will evaluate the rules to determine if the caller is authorized to connect
18 with the call recipient at the current time and date. If the caller is authorized by the recipient to
19 connect a recipient phone number, and furthermore authorized for the current time and date, the
20 application logic 660 will connect the call utilizing the public telephone switch 670. The
21 computer 1 passes the caller and call recipient phone numbers as stored in the database 665 to
22 the telephone switch 670 using an application programming interface ("API") appropriate to the
23 service provider or telephone switch manufacturer. The telephone service provider then
24 connects the satellite user telephone 675 to a call with the recipient telephone 680 by dialing
25 both numbers and connecting the call upon the parties' answer.

26 FIG. 23 is a flowchart of the process in an embodiment of the invention to manage
27 incoming SMS messages to a user such that the message recipient can control if they may be
28 messaged, when they are willing to accept messages, and who may leave messages for them.

29 In order to implement this embodiment of the invention, integration with existing SMS
30 services is required. Providers of SMS services, typically cellular phone network operators,
31 have implemented email gateways and APIs to their SMS systems. In order to effectively
32 implement managed SMS services using the invention, it must be tightly integrated or
33 embedded into the SMS services application architecture.

1 The SMS message recipient is required to connect to the application interface of the
2 invention 685 and define one or more rules to be applied as incoming SMS messages are
3 processed and to enter the target SMS phone number for their account on the SMS message
4 system.

5 When the message sender initiates an SMS message utilizing any of the methods above
6 (as well as others not noted), the system of the invention which is integrated with the paging
7 system application will lookup the recipient rules in the application system database 695.

8 The message recipient rules are compared to the current general rules they have defined
9 for processing incoming SMS messages or specific rules associated to the sender. The message
10 recipient's rules are evaluated to determine if the sender is authorized to send a message to the
11 message recipient's SMS device at the current date and time 700. If the rules allow the message
12 to be sent, the system will permit the message to be forwarded to the recipient's SMS device
13 710 utilizing its integration with the SMS system application. If the rules dictate that a message
14 is not authorized to be sent, then the message is rejected 705. The embodiment of the invention
15 may utilize any method to notify the sender of the rejection, or may not notify the user and
16 rather just not send the message.

17 FIG. 24 is a flowchart of the process in an embodiment of the invention to enable a party
18 to send an SMS message to a recipient's SMS enabled device while keeping the recipient's SMS
19 number concealed from the sending party. In order to provide a concealed SMS message
20 system phone number capability to the message recipient, the recipient's SMS system number
21 must be registered within the application of the invention computer 715. Upon registration, one
22 or both users, depending on their choices to become a member, are able to distribute one or
23 more unique system codes 720. System codes may be utilized as stand alone codes or
24 embedded into an Internet URL as below.

25
26 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
27 D80D4AA

28
29 In the example above, each code is a unique identifier generated by a publicly know
30 algorithm referred to as GUID or globally unique identifier, which is not an object of the
31 invention, that cannot be generated again. In the example above, the code is the string of
32 alphanumeric characters appearing after the "=" in the URL. The system code could be utilized
33 without the URL, or other forms of a unique identifier could be used as an alternative. For

1 example, a 10 digit numeric string similar to a traditional telephone number could be assigned to
2 a user and this system code could be used as the identifier which references the user's actual
3 SMS system number and call management rules associated with it.

4 Message recipients may distribute 720 their system code in a variety of ways, which are
5 standard communication methods including but not limited to: email, voice, written, chat,
6 instant messaging, and public or private web sites.

7 The sender initiates the SMS message 725 by either: 1) using their SMS device to send a
8 message using the recipient's system code as the target SMS number; 2) using a screen of the
9 invention to enter the system code and send an SMS message (invention is integrated with SMS
10 system); 3) using an Internet URL to activate a screen of the invention to send an SMS message
11 without having to enter the system code (code is embedded into URL); or 4) using an SMS
12 enabled software application to send an SMS message using the recipient system code.

13 Either method message initiation engages the application system logic of the invention to
14 verify the structure and contents of the URL and to search the application database for the SMS
15 number of the recipient associated with the system code 730.

16 The invention uses the SMS number for the SMS message recipient's SMS device stored
17 in its database to transmit the message to the receiving SMS device 735 . The invention is
18 integrated with the SMS service provider's application API or embedded into the SMS service
19 provider's application which handles the message delivery. In utilizing the system code method,
20 the SMS message recipient is not required to reveal their SMS number to the message sender.

21 FIG. 25 is a flowchart of the process in a further exemplary embodiment of the invention
22 to manage incoming mail and packages such that the recipient can control if, when, and who,
23 may send mail and packages to them. This embodiment of the invention would require 1)
24 integration with one or more commercial or government postal and package delivery services or
25 2) establishment of a mail and package processing and forwarding service which would serve as
26 in intermediary between the sender and recipient but utilize existing commercial and
27 government delivery services or 3) establishment of a new delivery service with the invention
28 implemented as a core part of its delivery process.

29 Herein, the name "sender" will refer to a party (individual, business, or organization)
30 sending a letter, document, post card, advertisement, parcel or any other type of item normally
31 delivered by the postal service or commercial delivery services. The recipient will refer to the
32 party receiving or intended to receive the item being delivered.

1 Regardless of the nature of the implementation, the overall processing and delivery of
2 mail and packages would be the same. The postal recipient is required to connect to the
3 application interface of the invention 740 and define one or more rules to be applied as
4 incoming delivery items are processed and to enter the target mailing address for delivery.

5 When the sender uses a delivery service to send the delivery item 745, the service
6 utilizes the system of the invention which is integrated with a delivery software application, or
7 alternately a human operator will use the application interface of the invention to lookup the
8 recipient rules in the application system database 750.

9 The recipient rules are compared to the current general rules they have defined for
10 processing incoming delivery items or specific rules associated to the sender. The recipient's
11 rules are evaluated to determine if the sender is authorized to send a delivery item to the
12 recipient's address at the current date and time 755. If the rules allow the delivery item to be
13 sent, the system will permit the item, either by authorizing it to a human operator using an
14 application interface to the invention, or by authorizing its delivery to a delivery service
15 software application. The delivery item will then be processed and delivered 765 according to
16 the normal operation of the delivery service. If the rules dictate that a delivery item is not
17 authorized to be sent, then the delivery item is rejected 760 and not delivered to the recipient.
18 The embodiment of the invention may utilize any method to process a rejection, potentially
19 through return of the delivery item to the sender.

20 FIG. 26 is a flowchart of the process in a further exemplary embodiment of the invention
21 to deliver a mail item or package to a recipient's mailing address while keeping the recipient
22 concealed. This embodiment of the invention would require 1) integration with one or more
23 commercial or government postal and package delivery services or 2) establishment of a mail
24 and package processing and forwarding service which would serve as an intermediary between
25 the sender and recipient but utilize existing commercial and government delivery services or 3)
26 establishment of a new delivery service with the invention implemented as a core part of its
27 delivery process.

28 In order to provide a concealed mailing address capability to the delivery item recipient,
29 the recipient's address must be registered within the application of the invention computer 770.
30 Upon registration, the recipient and optionally the sender is able to distribute one or more
31 unique system codes 775. Each code is a unique identifier generated by a publicly known
32 algorithm referred to as GUID or globally unique identifier, which is not an object of the
33 invention, that cannot be generated again. In other embodiments of the invention other forms of

1 a unique identifier could be used as an alternative. For example, a 10 digit numeric string
2 similar to a traditional telephone number could be assigned to a user and this system code could
3 be used as the identifier which references the user's actual mailing address and delivery
4 management rules associated with it.

5 Recipients may distribute their system code in a variety of ways, which are standard
6 communication methods including but not limited to: email, voice, written, chat, instant
7 messaging, and public or private web sites.

8 Regardless of the method used to distribute the system code, in the exemplary
9 embodiment a potential caller must obtain the system code in order to initiate a delivery. The
10 caller addresses the delivery item 780 by using the system code of the recipient as an alternative
11 to the recipient's mailing address. Optionally, the sender can use their own system code as the
12 return address 785 in order to keep their mailing address private.

13 When the sender uses a delivery service to send the delivery item, the service utilizes the
14 system of the invention which is integrated with a delivery software application, or alternately a
15 human operator will use the application interface of the invention to lookup the recipient rules in
16 the application system database 790. The database contains the actual mailing address for the
17 recipient, which will be used by the delivery service to deliver the item 795.

18 FIG. 27 represents an exemplary embodiment of the invention that provides the
19 capability of video conferencing system or video phone call users to connect calls using a
20 computer 1 for managing communications that is connected to a traditional telephone network.

21 A typical video conferencing configuration consists of a monitor 800 connected to a
22 video camera and control unit 810, and a remote control device 805. Other variations of the
23 configuration could combine or further separate the components, or other components could be
24 added such as a traditional computer but the essential elements of monitor, camera, control
25 hardware, and input device are always present. Video conferencing systems are usually
26 connected to the telecommunications system via one or more ISDN lines, or via leased or T1
27 lines that terminate at a telephone company point-of-presence (POP) facility.

28 A video phone call configuration has similar core components including monitor,
29 camera, control hardware, and input device, but is usually connected to standard telephone lines
30 and manufactured as a more compact unit which will also function as a standard telephone.

31 Video conferencing systems and video phones are similar but may not use compatible
32 communication methods and therefore may not have the capability to establish a video call
33 between the two types. Also, there may be variances in the capabilities of video conferencing

1 systems and video phones in that they may not be able to communicate to similar products in the
2 same category. This would be more common with video phones as they are a less mature
3 technology. For the purposes of discussing this embodiment, it is assumed that only compatible
4 devices will attempt to communicate through the system.

5 Upon initiating a phone call, the video caller's connection request is validated by the
6 telephone switch 815 by passing the call request to the application logic 820 of the computer 1.
7 The application logic 820 evaluates the call request for validity of syntax and structure, then
8 searches the rules database 825 for records associated with the call recipient's call management
9 settings.

10 If there are no such call management settings for the call recipient, the system can
11 respond based on system, group, or per user default setting to either allow or disallow the call,
12 or to allow a voice only call. This provides the flexibility to by default connect all calls that do
13 not associated to a rule, or to by default deny all calls that do not associate to a rule, or to allow
14 only allow a voice only call. Any variation of voice and video defaults could be configured into
15 the system.

16 If the database 825 does contain call management settings for the call recipient, the
17 application logic 820 will evaluate the rules to determine if the caller is authorized to connect
18 with the call recipient at the current time and date, and then determine if voice, video, or both
19 are permitted. If the caller is authorized by the recipient to connect a recipient video phone
20 number, and furthermore authorized for the current time and date, the application logic 820 will
21 connect the call utilizing the public telephone switch 815. Depending on the API used with the
22 telephone switch 815, this may be accomplished by returning a call approval code to the switch,
23 or establishing a new call setup sequence as provided by the switch 815 API. If the API
24 provides for passing an approval or denial code, the switch can simply connect the call just as it
25 would if it were not interfaced with the invention computer 1. If the switch API does not
26 support the specific functionality required to receive call approval and denial codes from an
27 external system, then a new call can be established such that the original caller connection is
28 terminated and a new call is established to both caller and call recipient phone numbers. As the
29 telephone switch manufacturers and telephone application systems have a varied set APIs
30 available to interface with the telephone switching infrastructure, the actual call connection
31 method will depend on the switching hardware and software utilized in a particular
32 implementation.

1 FIG. 28 represents a further exemplary embodiment of the invention that provides the
2 capability for video conferencing system, video phone, or Internet-based video and audio
3 devices, or multimedia communication application users to connect calls using a computer for
4 managing communications 1 that is connected to the public Internet or private network.

5 A typical video conferencing configuration consists of a monitor 845 connected to a
6 video camera and control unit 855, and a remote control device 850. Other variations of the
7 configuration could combine or further separate the components, or other components could be
8 added such as a traditional computer but the essential elements of monitor, camera, control
9 hardware, and input device are always present. In this embodiment we are assuming the use of
10 video conferencing equipment which is connected and can operate over the public Internet or
11 private network.

12 A video phone call configuration has similar core components including monitor,
13 camera, control hardware, and input device, but is usually manufactured in a more compact
14 offering. In this embodiment we are assuming the use of video phone equipment which is
15 connected and can operate over the public Internet or private network.

16 Internet-based video and audio devices are usually connected to a traditional computer.
17 The computer operates one or more control applications to collect the video and audio input
18 from the devices and to manage the transmission of the data across the public Internet or private
19 network. Although this is the typical case, video and audio units are available which can
20 operate independently of a separate computer and connect directly to the Internet via modem,
21 router, gateway, or LAN connection. These types of units have embedded the required
22 functions of a typical computer into their hardware. In this embodiment we are assuming the
23 use of Internet-based video and audio equipment which is connected and can operate over the
24 public Internet or private network.

25 Multimedia communication applications allow computer users to share live video and
26 audio similar to video conferencing, to sketch on a shared virtual white board, to simultaneously
27 review and modify documents, to transfer documents, and to review pre-recorded videos, among
28 other features, between two or more computers located anywhere on the public Internet or a
29 private network. These applications are connected to a variety of input devices as necessary to
30 collect input to be transmitted and shared among the computers participating in the session. In
31 this embodiment we are assuming the use of multimedia applications which are can operate over
32 the public Internet or private network.

1 Video conferencing systems and video phones are similar but may not use compatible
2 communication methods and therefore may not have the capability to establish a video call
3 between the two types. Also, there may be variances in the capabilities of video conferencing
4 systems and video phones in that they may not be able to communicate to similar products in the
5 same category. This would be more common with video phones as they are a less mature
6 technology. Internet video and audio devices may not be able to communicate with others of
7 similar capabilities do to incompatible application and transmission implementations.
8 Multimedia applications may also be incompatible depending on the manufacturer or user
9 configuration. For the purposes of discussing this embodiment, it is assumed that only
10 compatible devices and applications will attempt to communicate through the system.

11 For the purposes of describing this embodiment, users of the several communication
12 device and application combinations described above will be referred to as video callers and
13 video call will be used to describe to connection.

14 Upon initiating a phone call, the video call connection request is validated by the
15 application logic 865 of the computer 1. The application logic 865 evaluates the call request for
16 validity of syntax and structure, then searches the rules database 870 for records associated with
17 the call recipient's call management settings.

18 If there are no such call management settings for the call recipient, the system can
19 respond based on system, group, or per user default setting to either allow or disallow the call,
20 or to allow a voice only call. This provides the flexibility to by default connect all calls that do
21 not associated to a rule, or to by default deny all calls that do not associate to a rule, or to allow
22 only allow a voice only call. Any variation of voice and video defaults could be configured into
23 the system.

24 If the database 870 does contain call management settings for the call recipient, the
25 application logic 865 will evaluate the rules to determine if the caller is authorized to connect
26 with the call recipient at the current time and date, and then determine if voice, video, or both
27 are permitted. If the caller is authorized by the recipient to connect a recipient video address,
28 and furthermore authorized for the current time and date, the application logic 865 will connect
29 the call utilizing the public Internet 860.

30 FIG. 29 is a flowchart of the process in an embodiment of the invention to connect
31 parties to a video conference or video telephone call using the traditional telephone network
32 while keeping the caller and call recipient's phone numbers concealed. In order to provide a

1 concealed phone number capability to the users, both the caller's 890 and the call recipient's
2 895 telephone numbers must be registered within the application of the invention computer.

3 Upon registration, one or both users, is able to distribute one or more unique system
4 codes 900. In the exemplary embodiment, the system codes are generated and embedded into an
5 Internet URL which can be used to initiate a call.

6

7 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
8 [D80D4AA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)

9

10 Each code is a unique identifier generated by a publicly know algorithm referred to as
11 GUID or globally unique identifier, which is not an object of the invention, that cannot be
12 generated again. In the example above, the code is the string of alphanumeric characters
13 appearing after the "=" in the URL. In other embodiments of the invention, the code could be
14 utilized without the URL, or other forms of a unique identifier could be used as an alternative.
15 For example, a 10 digit numeric string similar to a traditional telephone number could be
16 assigned to a user and this system code could be used as the identifier which references the
17 user's actual telephone number and call management rules associated with it.

18 Callers may distribute their system code in a variety of ways, which are standard
19 communication methods including but not limited to: email, voice, written, chat, instant
20 messaging, and public or private web sites.

21 Regardless of the method used to distribute the system code, a potential caller must
22 obtain the system code in order to initiate a telephone call. The caller initiates the video call 905
23 by entering a code in an enabled application, or by utilizing a URL with the system code
24 embedded. The system code engages the application system logic of the invention to verify the
25 structure and contents of the code and to search the application database for the video telephone
26 number of the recipient associated with the system code 910.

27 In alternative embodiments of the invention, the system code processing and call
28 initiation could be handled in a variety of ways. For example, the caller could call a fixed
29 telephone number for a service provider, and then be prompted to enter the call recipient's
30 system code upon which the system would connect the video call.

31 The invention uses the telephone numbers for the caller and call recipient stored in its
32 database to connect both parties to a telephone call 915. The connection is accomplished by
33 integrating the invention with a telephone switching device or switching device API. In

1 utilizing the system code method, neither the video caller nor call recipient is required to reveal
2 their telephone number to the other.

3 FIG. 30 is a flowchart of the process in an embodiment of the invention to connect
4 parties to a video conference or video telephone call using the public Internet or private network
5 while keeping the caller and call recipient's network addresses and access codes concealed.

6 In order to provide a concealed connection capability to the users, both the caller's 920
7 and the call recipient's 925 network addresses and system access codes (if applicable to the
8 particular video communication application) must be registered within the application of the
9 invention computer. Video communications applications which allow two or more parties to
10 communicate live over the Internet required mechanisms of addressing in order to route traffic
11 between the callers. The basis for the addressing schemes is the TCP/IP protocol and associated
12 IP address of a user's computer.

13 Upon registration, one or both users, is able to distribute one or more unique system
14 codes 930. In the exemplary embodiment, the system codes are generated and embedded into an
15 Internet URL which can be used to initiate a call.

16
17 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
18 [D80D4AA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)

19
20 Each code is a unique identifier generated by a publicly know algorithm referred to as
21 GUID or globally unique identifier, which is not an object of the invention, that cannot be
22 generated again. In the example above, the code is the string of alphanumeric characters
23 appearing after the "=" in the URL. In other embodiments of the invention, the code could be
24 utilized without the URL, or other forms of a unique identifier could be used as an alternative.
25 For example, a 10 digit numeric string similar to a traditional telephone number could be
26 assigned to a user and this system code could be used as the identifier which references the
27 user's actual telephone number and call management rules associated with it.

28 Callers may distribute their system code in a variety of ways, which are standard
29 communication methods including but not limited to: email, voice, written, chat, instant
30 messaging, and public or private web sites.

31 Regardless of the method used to distribute the system code, a potential caller must
32 obtain the system code in order to initiate a video call. The caller initiates the video call 935 by
33 entering a code in an enabled application, or by utilizing a URL with the system code

1 embedded. The system code engages the application system logic of the invention to verify the
2 structure and contents of the code and to search the application database for the network address
3 of the recipient associated with the system code 940.

4 In other embodiments of the invention, the system code processing and call initiation
5 could be handled in a variety of ways. For example, the caller could call a fixed telephone
6 number for a service provider, and then be prompted to enter the call recipient's system code
7 upon which the system would connect the call.

8 The invention uses the network IP addresses for the caller and call recipient stored in its
9 database to connect both parties to a telephone call 945. In utilizing the system code method,
10 neither the video caller or call recipient is required to reveal their telephone number to the other.

11 FIG. 31 represents an embodiment of the invention whereas the capability is facsimile
12 devices and computer based facsimile applications to transmit fax documents using a computer
13 for managing communications 1 that is connected to the telephone network and public Internet
14 or private network.

15 A facsimile device is connected to the public telephone network 975, 980 or is using an
16 analog or digital cellular phone, or has a computer of the traditional type 950 connected to the
17 public Internet 955 or alternately the computer could utilize a modem to connect directly to the
18 stand alone facsimile devices. Both the computer equipped with fax application software and the
19 standard facsimile devices are potential fax document senders and recipients in this
20 embodiment. There are also facsimile devices which are able to connect to the public Internet or
21 private network as a transmission medium, such functionality provided either natively to the
22 device or as an add on component. The invention could be integrated into these network
23 enabled fax devices utilizing an API or embedding the invention into their operating software.
24 It is also functionally equivalent for any fax enabled software application or multifunction
25 device with embedded facsimile capability to be a sender or recipient in this embodiment.

26 The sender initiates the fax transmission call using their computer 950, or utilizing a
27 facsimile device 975, 980. Depending upon the software application, the computer may
28 transmit a fax document using direct transmission over the public Internet 955 to a fax gateway,
29 using email, or transmitting over the public Internet 955 or private network to another network
30 connected fax device. Upon initiating a transmission, the sender's connection request is
31 validated by the application logic 965. The application logic 965 evaluates the call request for
32 validity of syntax and structure, then searches the rules database 970 for records associated with
33 the call recipient's fax management settings.

1 If there are no such fax management settings for the fax recipient, the system can
2 respond based on system, group, or per user default setting to either allow or disallow the
3 transmission. This provides the flexibility to by default transmit all documents that do not
4 associate to a rule, or to by default deny all transmissions that do not associate to a rule.

5 If the database 970 does contain fax management settings for the fax recipient, the
6 application logic 965 will evaluate the rules to determine if the caller is authorized to transmit
7 documents to the recipient at the current time and date. If the sender is authorized by the
8 recipient to transmit documents, and furthermore authorized for the current time and date, the
9 application logic 965 will connect the call utilizing the public telephone switch 960 or utilizing
10 the public Internet 955 or private network according to sender and recipient configurations. If
11 connecting via the network, the computer 1 must be integrated with the appropriate fax software
12 application or communications gateway and utilize network addressing stored in the invention's
13 application database 970 to connect the sending and receiving devices. If using the public
14 telephone system, the computer 1 passes the caller and call recipient phone numbers as stored in
15 the database 970 when to the telephone switch 960 using an application programming interface
16 ("API") appropriate to the service provider or telephone switch manufacturer. The service
17 provider then connects sending and receiving facsimile devices 975, 980, or computer with
18 modem 950.

19 FIG. 32 is a flowchart of the process in the exemplary embodiment of the invention
20 which enables a party to send a fax document to a recipient's facsimile device while keeping the
21 recipient's fax telephone number concealed from the sending party.

22 In order to provide a concealed fax phone number capability to the message recipient,
23 the recipient's fax number must be registered within the application of the invention computer
24 985.

25 Upon registration, one or both users, depending on their choices to become a member,
26 are able to distribute one or more unique system codes 990. System codes may be utilized as
27 stand alone codes or embedded into an Internet URL as below.

28
29 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
30 D80D4AA

31
32 In the example above, each code is a unique identifier generated by a publicly know
33 algorithm referred to as GUID or globally unique identifier, which is not an object of the

1 invention, that cannot be generated again. In the example above, the code is the string of
2 alphanumeric characters appearing after the "=" in the URL. The system code could be utilized
3 without the URL, or other forms of a unique identifier could be used as an alternative. For
4 example, a 10 digit numeric string similar to a traditional telephone number could be assigned to
5 a user and this system code could be used as the identifier which references the user's actual fax
6 number and call management rules associated with it.

7 Message recipients may distribute their system 990 code in a variety of ways, which are
8 standard communication methods including but not limited to: email, voice, written, chat,
9 instant messaging, and public or private web sites.

10 The sender initiates the fax transmission 995 by using their fax device to send a message
11 using a phone number to a fax gateway integrated with the invention, entering the recipient's
12 system code as the target fax number. The gateway would consult the system database 1000 for
13 authorization to connect the call, then connect the fax transmission 1005 if it is approved. The
14 invention may also be integrated with a telecommunication switching device such that utilizing
15 a fax gateway device is not required. In that configuration, the switching device would receive
16 the fax call connection request, consult 1000 the invention for authorization to connect the call,
17 then connect the call 1005 if the rules stored in the system database allow such connection.

18 FIG. 37 is a flow chart of an exemplary process in an exemplary embodiment of the
19 present invention by which a calling party, device, or software application ("initiator") initiates
20 communications to a called party without supplying the communication address(es) of the called
21 party, device, or software application. In order to initiate communication between a first 1220
22 and a second 1225 party, without the initiator supplying the individual communications
23 addresses of the participants, the first 1220, and second 1225 parties' communication addresses
24 must both be registered within the application of the invention computer. Further, the initiating
25 party must identify to the system the first and second parties to be called.

26 When the registering party identifies to the system the first and second parties to be
27 called, a single unique system communications initiation code (standalone, or URL-embedded)
28 would be generated, and would be related by the system to the communications addresses of
29 each of the first and second parties to be called. That is, a single system code or system-code
30 embedded URL would be associated with the communications addresses of both the first and
31 second parties to be called. At this point, the registering party or other initiating party can
32 initiate a communications session between the first and second parties; the registering initiating
33 party may or may not themselves be one of the first or second parties.

1 As will be understood by someone with ordinary skill in the art, the description of two
2 parties is illustrative and is not a limitation of the invention. More than two parties can
3 participate in an invention-initiated communication as long as the communication addresses of
4 all parties are registered with the system, and as long as the communications devices of the
5 participants are technically enabled to participate. As demonstrated herein, the present
6 invention can interface with a wide variety of communication systems and technologies. As will
7 be understood by someone with ordinary skill in the art, the present invention is not limited to
8 communication methods described herein or now known, but would be equally applicable to
9 communication methods not now known or not described herein provided the communication
10 method offers interface capabilities.

11 The present invention supports varying sizes and full alphanumeric character support in
12 its addressing. The present invention supports communication address registration via user
13 computer interface, file import of addresses, or via application programming interface (API).

14 Continuing with FIG. 37, upon registration of the participants, a unique system code
15 would be generated 1230. System codes may be utilized as stand alone codes or may be
16 embedded into an Internet URL as below:

17
18 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
19 D80D4AA
20

21 In the example above, each code is a GUID. Generation of a GUID is not an object of
22 the invention. The generated GUID is unique; the same GUID will not be generated a second
23 time.

24 In the example above, the code is the string of alphanumeric characters
25 ("5631EDC86148489C9BFA904CAD80D4AA") appearing after the "=" in the URL. The
26 system code could be utilized without the URL, or other forms of a unique identifier could be
27 used as an alternative. For example, a 10 digit numeric string similar to a traditional telephone
28 number could be assigned to a user and this system code could be used as the identifier which
29 references the user's actual SMS system number and call management rules associated with it.

30 Continuing with FIG. 37, the system code will then be distributed to a communication
31 initiator 1235. System code distribution can be accomplished in a variety of ways, including but
32 not limited to: email, voice, written, chat, instant messaging, and public or private web sites. A

1 System code may also be distributed to a device or software application initiator via any data
2 transfer mechanism or application programming interface (API).

3 A communication initiator 1240 would use the system code or system code embedded
4 into a URL to begin a communication session. To do so, the communication initiator 1240
5 would provide the system of the present invention with the system code. The system of the
6 present invention would retrieve 1245 the communication addresses of the participants
7 corresponding to the system code.

8 The system of the present invention will then establish a communication session 1250
9 according to the specific interface with the communication system which has been previously
10 defined.

11 The exemplary embodiment of the present invention provides a generalized interface
12 structure. In order to add support for a new type of communications interface, a set of specific
13 integration code can be added to initiate message for the new communications interface – the
14 rest of the software would be isolated from the details of the new communications interface. As
15 new “links” and “rules” are defined in the system, a selection would be made of each
16 communication type (phone, SMS, etc) for each system code to be generated; the system
17 software would relate the correct code to initiate the appropriate communication session for each
18 communication type.

19 Using the invention in this way would enable communication initiation without the
20 initiator having specific communication addresses of the other participants and allows for a
21 single system code or URL to initiate a complete communication session between two or more
22 parties. For example, a user could click on a link embedded into a web page to connect
23 participants to a video phone call providing convenience to the user and address privacy to the
24 participants.

25 Communication management capabilities of the invention as described above could be
26 integrated within the context of this process to manage the initiated communication session
27 including, but not limited to scheduling automated initiation of communications and enforcing
28 rules allowing or denying participant communication.

29 FIG. 38 is a graphic representation of a computer 1 for managing communication that is
30 connected to both a traditional telephone network and a separate software application which
31 supports keyword capabilities in an exemplary embodiment of the invention. In the illustrated
32 exemplary embodiment, the computer 1 is a conventional computer including ROM (Read-Only
33 Memory), RAM (Random Access Memory), a processor, etc. The computer 1 is shown

1 connected to a public telephone system switch 1280, which is in turn connected to the
2 worldwide public telephone network 1281. The computer 1 is also integrated with a separate
3 keyword-supporting software application 1265. Integration of the computer 1 with the separate
4 keyword-supporting software application 1265 may be comprehensive or simple, depending on
5 the needs of the specific implementation.

6 Simple integration would require the keyword-supporting application 1265 to store and
7 utilize system codes or system code embedded URLs to initiate telephone calls using the
8 invention. More complex integrations would automate registration of phone numbers,
9 generation of system codes or URLs, and insertion of system codes into the application's
10 database.

11 As will be further disclosed below, computer 1 contains the hardware 1, application
12 software 1275, and database 1270 with which to operate features of the invention. The separate
13 keyword-supporting software application 1265 and the invention could be hosted on the same
14 computer provided the computer meets the hardware, software, and networking requirements of
15 the invention and provided the separate keyword-supporting application has sufficient
16 processing capacity.

17 A telephone system user who is initiating a call (the "caller", or "calling party") has a
18 telephone, e.g., 1285, connected to the public telephone network 1281 (or alternatively, is using
19 an analog or digital cellular phone); the caller has a conventional computer 1255 such as a
20 personal computer, connected to the Internet 1260 (also referred to herein as the "public
21 Internet") or to a private network with network connectivity enabling interaction with the
22 application 1265.

23 Another telephone system user who will receive the call (the "call recipient", or "called
24 party") has a telephone, e.g., 1290, connected to the public telephone network 1281 or is using
25 an analog or digital cellular phone.

26 The caller would initiate the phone call using the caller's computer 1255. The caller's
27 computer 1255 accesses the software application 1265 presented over the public Internet 1260
28 (or, alternatively, over a private network with network connectivity enabling interaction with the
29 application). The software application 1265 supports the use of "keywords", meaning a single
30 word, character sequence, or multiple words or character sequences which are related to specific
31 content delivery or action. Herein, such compatible applications and search engines will be
32 referred to collectively as "applications", "application", or "keyword-supporting application".

1 Examples of publicly available keyword-supporting applications include, for example:
2 AOL browser, Internet Explorer (with RealNames service), MSN, and Yahoo! search engine.
3 Many other Internet-enabled public applications, various private applications and applications
4 on private networks support the concept of keywords. A keyword-supporting application
5 commonly provides an input "box" for receiving user input of one or more words; such
6 applications commonly provide an onscreen "button" or icon labeled with a word such as "GO"
7 or "SEARCH". When a user inputs a word into an invention-enabled application input "box"
8 and clicks on the application keyword button, the application would evaluate the characters
9 entered and attempts to relate the input words to keywords recorded in the application.

10 As depicted in FIG. 39 and as discussed in more detail below, service providers can
11 register telephone numbers 1295, such as, e.g., for paying advertisers. In the exemplary
12 embodiment, the present invention would generate 1300 a unique communication initiation
13 system code for each registered telephone number and would provide the service provider with a
14 keyword relationship selection means. Using the keyword relationship selection means, the
15 service provider would relate the call initiation system code to an appropriate keyword 1305.
16 The present invention would record on a keyword database in a call initiation system code data
17 field, the call initiation system code associated with the corresponding keyword as selected by
18 the service provider. The present invention would also record in a call initiation database, a
19 record relating the call initiation system code to the registered telephone number for the
20 appropriate paying advertiser. It will be understood by someone with ordinary skill in the art
21 that the description of the telephone number owner as a paying advertiser is illustrative, and is
22 not a limitation of the invention. Rather, telephone keyword registrants could be any entity or
23 individual with a telephone number.

24 Returning to FIG. 38, in the exemplary embodiment of the present invention, the caller
25 would input a keyword into a keyword-supporting application input box and click on the
26 application keyword button, signaling the keyword-supporting application, e.g., 1265, to
27 evaluate the characters entered and relate the characters to keywords. In the exemplary
28 embodiment of the present invention, when the invention-enabled keyword-supporting
29 application, e.g., 1265, identifies that the word(s) entered is a keyword, the application accesses
30 the keyword database on which the keyword has been recorded. The keyword database of the
31 exemplary embodiment of the present invention would contain a call initiation system code. If a
32 call initiation system code is recorded for the particular keyword, then, as is further discussed in
33 relation to FIG. 42 below, the application would initiate a phone call between the caller and the

1 call recipient associated with the keyword call initiation system code. To initiate a call to the
2 call recipient, the application would use the call initiation system code to obtain the telephone
3 number for the call recipient from the database on which the telephone number has been
4 registered.

5 Upon initiating a phone call, the caller's connection request would be validated by the
6 application logic 1275 of the present invention. The application logic 1275 would evaluate the
7 call request for validity of syntax and structure, and would search and evaluate the rules
8 database 1270 for records associated with the call recipient's call management settings as
9 described above in relation to FIGS. 1 and 5. According to the results of the syntax and structure
10 verification and according to the rules for the particular call recipient, the application logic 1275
11 would either allow or deny the call. If call management features are not required for
12 implementation with the separate application, then call management rules for records associated
13 with the separate application will be defined to allow calls every day, 24 hours a day, essentially
14 bypassing call management features without preventing their implementation at a further date.

15 For calls authorized by the application logic 1275, the application logic 1275 will
16 connect the call utilizing the public telephone switch 1280. The computer 1 passes the caller
17 and call recipient phone numbers as stored in the database 1270 to the telephone switch 1280
18 using an application programming interface ("API") appropriate to the service provider or
19 telephone switch manufacturer. The exemplary embodiment of the invention utilizes an API
20 provided by a telephone service provider as an interface to its switching infrastructure 1280.
21 The API captures both caller and recipient telephone numbers along with other variables useful
22 for call setup and tracking. The telephone service provider then connects both parties'
23 telephones 1285, 1290 respectively, to a phone call by dialing both numbers and connecting the
24 call upon the parties' answer.

25 FIG. 39 is a flowchart of a process in the exemplary embodiment of the invention for
26 applications supporting keywords to relate phone call initiation codes or URLs generated by the
27 invention to keywords. Such application must support the use of "keywords", meaning a single
28 word, character sequence, or multiple words or character sequences which are related to specific
29 content delivery or action. Examples of publicly available applications supporting keywords
30 include, e.g.: AOL browser, Internet Explorer (with RealNames service), MSN, and Yahoo!
31 search engine. Many other Internet enabled public applications and private applications or
32 applications on private networks support keywords. These applications, according to the
33 particular application-specific method, store keywords and related content or actions.

1 As depicted in FIG. 39, utilizing the invention, a service provider of a keyword-
2 supporting application can register 1295 phone numbers with the system of the invention
3 through a user interface or automated data interface with the application. The system will
4 generate a system code 1300 or system code embedded URL with which to initiate calls; the
5 system will return the generated code or URL to the user or application interface. System codes
6 may be utilized as stand alone codes or embedded into an Internet URL as below:

7

8 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
9 D80D4AA

10

11 As previously mentioned, and as depicted in the example above, each generated code is a
12 GUID (globally unique identifier), the generation of which is not an object of the invention. In
13 the example above, the code is the string of alphanumeric characters
14 ("5631EDC86148489C9BFA904CAD80D4A") appearing after the "=" in the URL. The system
15 code could be utilized without the URL. Alternatively, other forms of a unique identifier could
16 be used. For example, a 10 digit numeric string similar to a traditional telephone number could
17 be assigned to a user and this system code could be used as the identifier which references the
18 user's actual SMS system number and call management rules associated with it.

19 The separate keyword-supporting application will then relate 1305 the system code or
20 URL to an appropriate keyword either automatically or by a user entering or selecting the
21 relationship; the relationship between the keyword and system code/URL will be recorded into a
22 user interface or database.

23 Once the relationship between the system code and keyword is established 1305, the
24 invention can be utilized by the separate keyword-supporting application to initiate telephone
25 calls when a user enters the specific keyword as is discussed in relation to FIGS. 38 and 42.

26 Using the invention in connection with keyword-supporting applications provides a way
27 for users to conveniently connect phone calls with businesses or individuals by simply entering
28 a known keyword into the URL-enabled input box of the application. For example, typing
29 "callmicrosoft" or "call microsoft" could initiate a telephone call between the user and the
30 company which had its phone number registered with the system of the invention and related to
31 the separate application's keywords contained in the quotes.

32 FIG. 42 is a flowchart of the process in the exemplary embodiment of the invention to
33 provide web browsers and other keyword-supporting applications supporting web URL

1 navigation with a mechanism to initiate telephone calls when specific keywords are entered by
2 users in the application web address input box.

3 A user of the web browser or keyword-supporting application would enter a keyword
4 into the web address input area of the keyword-supporting application 1340; this web address
5 input area is often labeled "address". The browser or application would then analyze the words
6 or characters 1345 according to browser's or application's analysis capabilities in order to
7 determine if keywords or standard web addresses have been entered.

8 Keywords are generally accepted to be of alphanumeric characters such as "callkmart" as
9 opposed to standard web page addresses which take the form of a Uniform Resource Locator
10 ("URL") "http://www.domain.com/index.htm" or the shorthand version supported by most
11 contemporary applications "www.domain.com". Keywords could also be implemented as
12 multiple words or character strings separated by a space or other delimiter. For example "call
13 kmart" combines two words with a space but could be utilized as a single keyword. Keywords
14 could also be used in combination with a word or words, or character sequences following the
15 keyword to create a target of action for the keyword. For example using "instantcall kmart", the
16 word "instantcall" could be the keyword an application was configured to recognize, and
17 "kmart" would be the target of the keyword, evaluated 1345 to determine if it serves as a
18 secondary keyword registered with the application; otherwise the string "kmart" would be
19 treated as regular non-keyword user input.

20 Upon identifying a designated keyword sequence 1350 as one that has been registered to
21 be related within the application to a telephone number as was described above in connection
22 with the description of FIG. 39, the application would then determine 1355 whether the user's
23 telephone number (e.g., (555) 444-1111) is known to the browser or application 13605, or, in
24 the alternative, would prompt the user for the phone number 1365. User prompting 1365 can
25 also be serviced by the system of the invention in the exemplary embodiment by simply using
26 the system code URL without providing the user's phone number. Otherwise, if the phone
27 number (e.g., (555) 444-1111) is known to the browser or application, then it can be passed to
28 the system of the invention in a URL encoded as:

29
30 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA&fromNumber=5554441111)
31 [D80D4AA&fromNumber=5554441111](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA&fromNumber=5554441111)
32

1 Using the system code or system code embedded URL related to the keyword, along
2 with insertion of the user phone number if the implementation permits, the browser or
3 application would initiate a phone call 1370.

4 The system of the invention would retrieve one or both telephone numbers 1375 based
5 on the data related to the system code that has been registered to be related within the
6 application as was described above in connection with the description of FIG. 39. If the system
7 does not have the phone number of the caller as transmitted by the browser or application 1360
8 and 1370, the system of the invention can optionally prompt the user for a phone number using
9 its web interface or the system can return an error status to the browser, application, or user.

10 Upon retrieval of the required telephone numbers 1375, the system would connect 1380
11 the telephone call between the user and the specified phone number associated with the
12 keyword.

13 The invention can be implemented with search engines in a manner similar to that
14 described above with respect to keyword-supporting applications. FIG. 43 is a flowchart of the
15 process in the exemplary embodiment of the invention to provide keyword-supporting search
16 engines a mechanism with which to initiate telephone calls when specific keywords are entered
17 by users in the application web address input box. Examples of publicly available search
18 engines supporting keywords include: Yahoo!, Altavista, Google, Go.com, and Lycos. Other
19 Internet enabled public search engines and private search engines on the public Internet or
20 private networks support the concept of keywords.

21 As depicted in FIG. 43, a user of the web browser or application would enter a keyword
22 into the search input area of the search engine 1385, and would activate the search engine to find
23 the keyword by clicking a button, or other onscreen symbol; search activation buttons are often
24 labeled "Search" or "Go". The invention-enabled search engine would then analyze the words
25 or characters 1390 according to the search engine's capabilities in order to determine if
26 keywords are present in the user search input.

27 Upon identifying a designated keyword sequence 1395 as registered to be related within
28 the application to a particular telephone number (as describe in connection with FIG. 39), the
29 invention-enabled search engine could determine 1400 if the user's telephone number is known
30 to the browser or application 1405, or, in the alternative, would prompt the user for the user's
31 phone number 1410. User prompting 1410 can also be serviced by the system of the invention
32 in the exemplary embodiment of the invention by simply using the system code URL without
33 providing the user's phone number. Otherwise, if the phone number is known to the user's

1 browser, the search engine or application, then it can be passed to the system of the invention in
2 a URL encoded as:

3
4 `http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA`
5 `D80D4AA&fromNumber=5554441111`

6
7 Using the system code or system code embedded URL related to the keyword, along
8 with insertion of the user phone number if the implementation permits, the browser or
9 application would initiate a phone call 1415.

10 The system of the invention would retrieve one or both telephone numbers 1420 based
11 on the data related to the system code as discussed in FIG. 39. If the system does not have the
12 phone number of the caller as transmitted by the browser or application 1405, the system of the
13 invention can optionally prompt 1410 the user for a phone number using its web interface or the
14 system can return an error status to the browser, application, or user.

15 Upon retrieval of the required telephone numbers 1420, the system would connect 1425
16 the telephone call between the user and the specified phone number associated with the
17 keyword.

18 As will be understood by someone with ordinary skill in the art, the description of
19 telephone call initiation is not a limitation of the types of communications that can be initiated
20 through the keyword-supporting application integration with the present invention. Rather, the
21 invention can be used to initiate communication using a variety of communication types
22 between communication devices and software applications, included but not limited to: video
23 conferencing, video phones, pagers, SMS, fax machines, voice mail systems, and telephones.

24 FIG. 40 is a flowchart of the process in the exemplary embodiment of the invention for
25 applications supporting keywords to relate communication initiation codes or URLs generated
26 by the invention to keywords. As depicted, in FIG. 40, utilizing the invention, a provider of an
27 invention-enabled keyword-supporting application can register 1310 communication addresses
28 with the system of the invention through a user interface or automated data interface with the
29 application.

30 As was previously described above, the present invention can interface with a wide
31 variety of communication systems and technologies; as will be understood by someone with
32 ordinary skill in the art, the present invention is not limited to communication methods
33 described herein or now known, but would be equally applicable to communication methods not

1 now known or not described herein provided the communication method offers interface
2 capabilities.

3 The present invention supports varying sizes and full alphanumeric character support in
4 its addressing. The present invention supports communication address registration via user
5 computer interface, file import of addresses, or via application programming interface (API).

6 System codes may be utilized as stand alone codes or embedded into an Internet URL as
7 below:

8
9 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
10 [D80D4AA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)

11
12 In the example above, each code would be a GUID. The system code could be utilized
13 without the URL, or other forms of a unique identifier could be used as an alternative.

14 Continuing with FIG. 40, the separate invention-enabled keyword-supporting application
15 would then relate 1320 the system code or URL to an appropriate keyword. To do this, the
16 system would, for example, provide a selection mechanism or would, alternatively, provide for
17 user entry of the relationship into a user interface; the system would then record the relationship
18 in a database.

19 Once the relationship between the system code and keyword is established 1320, the
20 invention can be utilized by the separate keyword-supporting application to initiate
21 communications when a user enters the specific keyword as further described below in
22 connection with the description of FIG. 60.

23 This feature of the invention provides a way for users to conveniently initiate
24 communication using a variety of communication types between communication devices and
25 software applications, included but not limited to: video conferencing, video phones, pagers,
26 SMS, fax machines, voice mail systems, and telephones. To do so, users would simply enter a
27 known keyword into the URL enabled input box of the keyword-supporting application to
28 initiate the communication. For example, typing "vidcallmicrosoft" or "vidcall microsoft" could
29 initiate a video conference between the user and the company which had its video conferencing
30 address registered with the system of the invention and related to the separate application's
31 keywords contained within the quotes.

32 FIG. 60 is a flowchart of the process in the exemplary embodiment of the invention to
33 provide web browsers, search engines, and other keyword-supporting applications a mechanism

1 with which to initiate various types of communication sessions when specific keywords are
2 entered by users in the application input box. As was previously described above, the present
3 invention can interface with a wide variety of communication systems and technologies; as will
4 be understood by someone with ordinary skill in the art, the present invention is not limited to
5 communication methods described herein or now known, but would be equally applicable to
6 communication methods not now known or not described herein provided the communication
7 method offers interface capabilities.

8 As depicted in FIG. 60, a user of an invention-enabled keyword-supporting application
9 would enter a keyword into the input area of the application 1805. The application would
10 analyze the user-input words or characters 1810 according to the application's analysis
11 capabilities in order to determine if keywords or standard user input were entered.

12 Continuing with FIG. 60, upon identifying a designated keyword sequence 1815 as
13 related within the application in FIG. 40, the invention-enabled application would then
14 determine 1820 if the user's communication address is known to the application 1825, or in the
15 alternative, simply prompt the user for the user's communication address 1830. User prompting
16 1830 can also be serviced by the system of the invention in the existing embodiment by simply
17 using the system code URL without providing the user's communication address. Otherwise, if
18 the communication address is known to the application then it can be passed to the system of the
19 invention in a URL encoded as:

20
21 `http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA`
22 `D80D4AA&fromNumber=5554441111`

23
24 Using the system code or system code embedded URL related to the keyword, along
25 with insertion of the user communication address if the implementation permits, the invention-
26 enabled browser or application would initiate a communication session 1835.

27 The system of the invention would retrieve one or both communication addresses 1840
28 based on the data related to the system code as discussed in connection with the description
29 above of FIG. 40. If the system does not have the communication address of the caller as
30 transmitted by the application 1825, the system of the invention can optionally prompt 1830 the
31 user for a communication address using its web interface or the system can return an error status
32 to the browser, application, or user.

1 Upon retrieval of the required communication addresses 1840, the system would connect
2 the communication session 1845 between the user and the specified communication address
3 associated with the keyword.

4 As will be understood by someone with ordinary skill in the art, the descriptions of
5 telephone call initiation and other types of communication initiation are not a limitation of the
6 functionality of the invention that can be initiated through the keyword-supporting application
7 integration with the present invention. Rather, for example, the invention can be implemented
8 to initiate electronic document downloads by simply entering a known keyword into the URL
9 enabled input box of the application to initiate the download.

10 FIG. 41 is a flowchart of the process in the exemplary embodiment of the invention for
11 applications that support keyword searches to relate electronic document download initiation
12 codes, or URLs, generated by the invention to keywords. As depicted in FIG. 41, a provider of
13 a keyword-supporting application would register 1325 electronic document addresses with the
14 system of the invention through a user interface or automated data interface with the application.
15 The system would generate a system code 1330 or system code embedded URL which provides
16 a mechanism to initiate electronic document retrieval and return it to the user or application
17 interface. System codes may be utilized as stand alone codes or embedded into an Internet URL
18 as below:

19
20 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
21 D80D4AA

22
23 In the example above, each code is a GUID. The system code could be utilized without
24 the URL, or other forms of a unique identifier could be used as an alternative.

25 The separate keyword-supporting application service provider will then relate 1335 the
26 system code or URL to an appropriate keyword – the system would, for example, provide a
27 selection mechanism or would, alternatively provide for user entry of the relationship into a user
28 interface; the system would then record the relationship in a database.

29 Once the relationship between the system code and keyword is established 1335, the
30 invention can be utilized by the invention-enabled separate keyword-supporting application to
31 initiate electronic document download in response to a user entering the specific keyword to
32 which the document is related, and as is described below in connection with FIG. 61. This
33 feature of the invention provides a way for users to conveniently initiate electronic document

1 downloads by simply enter a known keyword into the URL enabled input box of the application
2 to initiate the download. For example, typing "windowsproductinfo" or "productinfo windows"
3 could initiate a document download to the user's browser according to the electronic document
4 address which was registered with the system of the invention and related to the separate
5 application's keywords contained in the quotes.

6 FIG. 61 is a flowchart of the process in the exemplary embodiment of the invention to
7 provide web browsers, search engines, and other keyword-supporting applications with a
8 mechanism to initiate electronic document downloads in response to specific user-input
9 keywords entered by users in the application input box. As depicted in FIG. 61, a user of an
10 invention-enabled keyword-supporting application would enter a keyword into an input area of
11 the keyword-supporting application 1850. The application would analyze the words or
12 characters 1855 according to the application's analysis capabilities in order to determine if
13 keywords or standard user input were entered.

14 Upon identifying a designated keyword sequence 1857 as related within the application (as
15 registered as was described above in connection with FIG. 41) to a system code or system code
16 embedded URL, the system of the invention would retrieve the electronic document address 1860,
17 and would initiate a download session 1865 using the web server of the invention and standard web
18 mechanisms. One such mechanism in the exemplary embodiment of the invention would be to issue
19 at meta tag refresh, commonly referred to as a "redirect" in the resulting page displayed when the
20 system code embedded URL is utilized by the application. A sample of a meta tag redirect is:

21
22 <META HTTP-EQUIV="refresh"
23 CONTENT="1;URL=http://www.docserver.com/docs/productinformation.doc">
24

25 Other methods exist to initiate a download, which are not an object of the invention but
26 which could be employed along with the invention to deliver electronic documents. Depending on
27 the capabilities and settings of the user's web browser or application, and at the user's elections, the
28 electronic document may be optionally 1870 downloaded and saved to their computer, displayed
29 within the browser or application, or browsed via launching a separate application to interact with
30 the electronic document.

31 It will be understood by someone with ordinary skill in the art that the descriptions
32 herein of individual features of the present invention are not limited to separate implementation.
33 Rather, features of the present invention can be combined in numerous ways. For example, in
34 one exemplary embodiment, the invention could be implemented such that in a single keyword-

1 supporting application, a keyword could be related to any of a telephone number, a
2 communications address, and/or an electronic document address, and could initiate
3 communication or online interaction based on the keyword relationship(s). In such an
4 embodiment, a single keyword could be related to a plurality of communication and online
5 interaction addresses; in response to a user entering a keyword, the system would present for the
6 user's selection the communication and/or interactions related to the keyword.

7 In addition to relating keywords with telephone numbers, communication addresses, and
8 the like, the invention further relates Internet Domain Name System (DNS) to telephone
9 numbers, communication addresses and the like, and provides activation of communications and
10 interaction based on such relationships. DNS is the standard mechanism for translating host
11 domain names into the Internet Protocol (IP) addresses required for computer applications to
12 communicate over the Internet. As will be understood by those skilled in the art, a DNS can be
13 configured, with appropriate entries, to provide navigation to web servers, email servers, ftp
14 servers, or other applications on the Internet or on private networks with private DNS
15 implementations.

16 FIG. 44 is a flowchart of the process in the exemplary embodiment of the invention to
17 configure a host entry within the Internet Domain Name System (DNS) which the system of the
18 invention will relate to a particular telephone number. As depicted in FIG. 44, a unique host
19 entry can be created 1430 within a DNS domain record. For example, in the domain
20 mycompany.com, a host called "call" could be configured as follows:

21
22 call A 66.130.20.182

23
24 This host record entry within an authoritative DNS server for the mycompany.com
25 domain, will direct all DNS lookup requests for call.mycompany.com to the host located at IP
26 address 66.130.20.182.

27 In the current embodiment of the invention, host entries can be configured in DNS 1430
28 to point to a web server of the invention's IP address or to a separate web server. Continuing
29 with FIG. 44, the web server would be configured 1435 to host the appropriate IP address and
30 the web server application configured to host web services on that IP address, each according to
31 the administrative facilities of the computer operating system and web server software.

1 As depicted in FIG. 44, the system of the present invention would then be configured to
2 relate 1440 the unique URL of the hosted web site with a system code embedded URL
3 generated by the system of the invention which would be related to a specific telephone number.

4 As will be understood by those skilled in the art, there are a variety of ways to
5 accomplish the navigation of a web browser session initiated with a specific host URL to result
6 in the browser navigating to a page of a system code embedded URL. The invention can
7 support any method of configuration which results in the system code embedded URL being
8 executed by the web browser. One method is to define a meta refresh tag, typically called a
9 "redirect" on a page hosted by the server of the invention or an independent web server
10 configured to host a specific domain host, for example:

11
12 <META HTTP-EQUIV="refresh" CONTENT="1;URL=
13 http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4
14 AA ">

15
16 Another method would be to define the system encoded URL as the base page for a web
17 site within the web server of the invention's configuration facilities. Another method would be
18 to use Javascript code in a page delivered by the web server of the invention or separate web
19 server that would navigate the user's web browser to the system encoded URL.

20 The exemplary system of the invention also includes a custom created ISAPI
21 (Microsoft's Internet Information Server Application Programming Interface) filter, which, in
22 the exemplary embodiment, functions exclusively with Microsoft's Internet Information Server
23 web server. This filter is installed into the web server of the invention to evaluate incoming web
24 page delivery requests and to redirect certain page requests to desired system encoded URLs
25 according to the system of the invention's instructions.

26 FIG. 45 is a flowchart of the process in the exemplary embodiment of the invention to
27 configure a host entry within the Internet Domain Name System (DNS) which the system of the
28 invention will relate to a communication address. A unique host entry will be created 1445
29 within a DNS domain record. For example, in the domain mycompany.com, a host called "call"
30 could be configured as such:

31
32 call A 66.130.20.182
33

1 This host record entry within an authoritative DNS server for the mycompany.com
2 domain, will direct all DNS lookup requests for call.mycompany.com to the host located at IP
3 address 66.130.20.182.

4 In the current embodiment of the invention, host entries can be configured in DNS 1445
5 to point to a web server of the invention's IP address or to a separate web server. The web
6 server is configured 1450 to host the appropriate IP address and the web server application
7 configured to host web services on that IP address, each according to the administrative facilities
8 of the computer operating system and web server software.

9 The system of the invention would then be configured to relate 1455 the unique URL of
10 the hosted web site with a system code embedded URL generated by the system of the invention
11 which would be related to a specific communication address.

12 It will be understood by someone with ordinary skill in the art that there are a variety of
13 ways available to accomplish the navigation of a web browser session initiated with a specific
14 host URL to result in the browser navigating to a page of a system code embedded URL.

15 The invention can support any method of configuration which results in the system code
16 embedded URL being executed by the web browser. One method would be to define a meta
17 refresh tag, typically called a "redirect" on a page hosted by the server of the invention or an
18 independent web server configured to host a specific domain host:

19
20 <META HTTP-EQUIV="refresh" CONTENT="1;URL=
21 http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4
22 AA ">

23
24 Another method would be to define the system encoded URL as the base page for a web
25 site within the web server of the invention's configuration facilities. Another method would be
26 to use Javascript code in a page delivered by the web server of the invention or separate web
27 server that would navigate the user's web browser to the system encoded URL.

28 The system of the invention would also include a custom created ISAPI filter, which
29 would function exclusively with Microsoft's Internet Information Server web server. This filter
30 would be installed into the web server of the invention to evaluate incoming web page delivery
31 requests and to redirect certain page requests to desired system encoded URLs according to the
32 system of the invention's instructions.

FIG. 46 is a flowchart of the process in the exemplary embodiment of the invention to configure a host entry within the Internet Domain Name System (DNS) which the system of the invention will relate to a particular electronic document address. A unique host entry will be created 1460 within a DNS domain record. For example, in the domain mycompany.com, a host called "call" could be configured as such:

call A 66.130.20.182

This host record entry within an authoritative DNS server for the mycompany.com domain, will direct all DNS lookup request for call.mycompany.com to the host located at IP address 66.130.20.182.

In the exemplary embodiment of the invention, host entries can be configured in DNS 1460 to point to a web server of the invention's IP address or to a separate web server. The web server would be configured 1465 to host the appropriate IP address and the web server application configured to host web services on that IP address, each according to the administrative facilities of the computer operating system and web server software.

The system of the invention would then be configured to relate 1470 the unique URL of the hosted web site with a system code embedded URL generated by the system of the invention which would be related to a specific telephone number.

It will be understood by someone with ordinary skill in the art that there are a variety of ways available to accomplish the navigation of a web browser session initiated with a specific host URL to result in the browser navigating to a page of a system code embedded URL. The invention can support any method of configuration which results in the system code embedded URL being executed by the web browser. One method would be to define a meta refresh tag, typically called a "redirect" on a page hosted by the server of the invention or an independent web server configured to host a specific domain host:

```
<META HTTP-EQUIV="refresh" CONTENT="1;URL=  
http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4  
AA ">
```

Another method would be to define the system encoded URL as the base page for a web site within the web server of the invention's configuration facilities. Another method would be

1 to use Javascript code in a page delivered by the web server of the invention or separate web
2 server that would navigate the user's web browser to the system encoded URL.

3 The system of the invention would also include a custom created ISAPI filter, which
4 would function exclusively with Microsoft's Internet Information Server web server. This filter
5 would be installed into the web server of the invention to evaluate incoming web page delivery
6 requests and to redirect certain page requests to desired system encoded URLs according to the
7 system of the invention's instructions.

8 FIG. 47 is a flowchart of the process in the exemplary embodiment of the invention to
9 provide users of web browsers and other applications supporting web URL navigation a
10 mechanism with which to initiate telephone calls when specific Internet host names are entered
11 by users in the application web address input box. Examples of publicly available applications
12 supporting web browsing include: AOL browser, Internet Explorer, Netscape, and Mosaic.
13 Many other Internet web enabled public applications and private applications or applications on
14 private networks support web browsing. These applications use their standard web protocols
15 and capabilities, including DNS as discussed in Fig 44, to navigate to web pages related to
16 domain host names.

17 As depicted in FIG. 47, a user of an invention-enabled web browser or application enters
18 a host name or URL into the web address input area of the web browser or application 1475 (the
19 input area is often labeled "address"). The browser or application analyzes the words or
20 characters 1480 according to standard web browser capabilities in order to connect with the
21 appropriate web server host and request a page. Standard web site addresses take the form of a
22 Uniform Resource Locator ("URL") "http://www.domain.com/" without a specific page
23 requested after the final "/" or the shorthand version supported by most contemporary
24 applications "www.domain.com".

25 Continuing with FIG. 47, the invention-enabled web server or separate web server
26 receives the page request from the browser or application and routes the web browser to the
27 system code URL according to relationships defined to the system as described in connection
28 with FIG. 44.

29 As depicted in FIG. 47, the system of the invention will retrieve connection data related
30 to the system code 1485. If the connection data does not include a phone number of the user
31 1490, the system of the invention prompts the user for a phone number 1495 via standard web
32 browser interface. Otherwise the user phone number is retrieved from the system database

1 1500. The system then initiates a phone call connecting the user and the destination phone
2 number 1510.

3 FIG. 48 is a flowchart of the process in the exemplary embodiment of the invention to
4 provide users of web browsers and other applications supporting web URL navigation a
5 mechanism with which to initiate communication sessions when specific Internet host names are
6 entered by users in the application web address input box. The invention can interface with a
7 wide variety of systems as demonstrated herein and could interface with any conceivable
8 communication method provided the communication method offers interface capabilities.
9 Examples of publicly available applications supporting web browsing include: AOL browser,
10 Internet Explorer, Netscape, and Mosaic. Many other Internet web enabled public applications
11 and private applications or applications on private networks support the web browsing. These
12 applications use their standard web protocols and capabilities, including DNS as discussed in
13 connection with the description above of FIG. 45, to navigate to web pages related to domain
14 host names.

15 As depicted in FIG. 48, a user of a web browser or application enabled to run the system
16 of the present invention, or otherwise integrated with the system of the present invention, would
17 enter a host name or URL into the web address input area of their application 1515 (the input
18 area is commonly labeled "address"). The browser or application would analyze the words or
19 characters 1520 according to standard web browser capabilities in order to connect with the
20 appropriate web server host and request a page. Standard web site addresses take the form of a
21 Uniform Resource Locator ("URL") "http://www.domain.com/" without a specific page
22 requested after the final "/" or the shorthand version supported by most contemporary
23 applications "www.domain.com".

24 As depicted in FIG. 48, the invention-enabled web server (including a web server
25 integrated with a separate system of the invention) would receive the page request from the
26 browser or application and would route and relate the request to the system code URL according
27 to relationships established as described above in connection with FIG. 45.

28 The system of the invention would retrieve connection data related to the system code
29 1525. If the connection data does not include phone number of the user 1530, the system of the
30 invention could prompt the user for a phone number 1540 via standard web browser interface.
31 Otherwise the user phone number would be retrieved from the system database 1535. The
32 system would then initiate a phone call connecting the user and the destination phone number
33 1550.

1 FIG. 49 is a flowchart of the process in the exemplary embodiment of the invention to
2 provide users of web browsers and other applications supporting web URL navigation and
3 electronic file downloads a mechanism with which to initiate electronic file downloads in
4 response to entry by a user of one of specific Internet host names in the application web address
5 input box. Examples of publicly available applications supporting web browsing include: AOL
6 browser, Internet Explorer, Netscape, and Mosaic. Many other Internet web enabled public
7 applications and private applications or applications on private networks support the web
8 browsing. These applications use their standard web protocols and capabilities, including DNS
9 as discussed in connection with the above description of FIG 46, to navigate to web pages
10 related to domain host names.

11 As depicted in FIG. 49, a user of the invention-enabled web browser or application
12 would enter a host name or URL into the web address input area of the invention-enabled web
13 browser or application 1555 (the input area is commonly labeled "address"). The browser or
14 application would analyze the entered words or characters 1560 according to standard web
15 browser capabilities in order to connect with the appropriate web server host and request a page.
16 Standard web site addresses take the form of a Uniform Resource Locator ("URL")
17 "http://www.domain.com/" without a specific page requested after the final "/" or the shorthand
18 version supported by most contemporary applications "www.domain.com".

19 The web server of the invention or separate web server would receive the page request
20 from the browser or application and would route and relate the request to the system code URL
21 according to Fig. 46.

22 The system of the invention would retrieve the electronic document address related to
23 the system code 1565. The system of the invention would initiate a download session 1570 using
24 the web server of the invention and standard web mechanisms. One such mechanism in the
25 exemplary embodiment of the invention would be to issue a meta tag refresh, commonly referred to
26 as a "redirect", in the resulting page displayed when the system code embedded URL is utilized by
27 the application. A sample of the meta tag is as follows:

28
29 <META HTTP-EQUIV="refresh"
30 CONTENT="1;URL=http://www.docserver.com/docs/productinformation.doc">

31

32 Other methods exist to initiate a download, which are not an object of the invention but
33 which could be employed along with the invention to deliver electronic documents.

1 Depending on the capabilities and settings of the user's web browser or application, and at
2 the user's elections, the electronic document may be optionally 1575 downloaded and saved to their
3 computer, displayed within the browser or application, or launch a separate application to interact
4 with the electronic document.

5 It will be understood by someone with ordinary skill in the art that the descriptions
6 herein of individual features of the present invention are not limited to separate implementation.
7 Rather, features of the present invention can be combined in numerous ways. For example, in
8 one exemplary embodiment, the invention could be implemented such that in a single search
9 engine application, a DNS could be related to any of a telephone number, a communications
10 address, and/or an electronic document address, and could initiate communication or online
11 interaction based on the DNS relationship(s). In such an embodiment, a single DNS could be
12 related to a plurality of communication and online interaction addresses; in response to a user
13 entering a DNS, the system would present for the user's selection the communication and/or
14 interactions related to the DNS.

15 FIG. 50 is a flowchart of the process in the exemplary embodiment of the invention for
16 search engine applications to relate phone call initiation codes or URLs generated by the
17 invention to keywords located in search results. Many search engines support the use of
18 "keywords". In the context of search engines, a keyword can be related to specific content
19 delivery or action. Examples of publicly available search engines supporting keywords include:
20 Yahoo!, Altavista, Google, Go.com, and Lycos. Many other Internet enabled public
21 applications and private applications or applications on private networks support the concept of
22 keywords. These applications use their own capabilities, either proprietary or publicly known,
23 to store keywords and related content or actions. In order to provide this capability, the search
24 results and keyword processing systems of the search engines must be enhanced to provide a
25 method of analyzing search results for keywords and inserting specific call initiation links as
26 described below in connection with FIG. 53.

27 As depicted in FIG. 50, utilizing the invention, a provider of a search engine would
28 register 1580 phone numbers with the system of the invention through a user interface or
29 automated data interface with the application. The system would generate a system code 1585
30 or system code embedded URL which provides a mechanism to initiate calls and would return it
31 to the user or application interface. System codes may be utilized as stand alone codes or
32 embedded into an Internet URL as below:

33

1 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
2 D80D4AA

3 In the example above, each code is a GUID. The system code could be utilized without
4 the URL, or other forms of a unique identifier could be used as an alternative. For example, a
5 10 digit numeric string similar to a traditional telephone number could be assigned to a user and
6 this system code could be used as the identifier which references the user's actual SMS system
7 number and call management rules associated with it.

8 The invention-enabled search engine would then relate 1590 the system code or URL to
9 an appropriate keyword either automatically or by a user entering the relationship into a user
10 interface; the relationship is stored in a database.

11 Once the relationship between the system code and keyword is established 1590, the
12 invention would be utilized by the search engine to initiate telephone calls in response to a user
13 entering the specific keyword as discussed in connection with the descriptions of FIGS. 38 and
14 53.

15 FIG. 51 is a flowchart of the process in the exemplary embodiment of the invention for
16 search engine applications to relate communication initiation codes or URLs generated by the
17 invention to keywords located in search results. In order to provide this capability, the search
18 engine must support keywords, and the search results and keyword processing systems of the
19 search engines must be enhanced to provide a method of analyzing search results for keywords
20 and inserting specific communication initiation links as discussed in connection with the
21 description of FIG. 54.

22 As depicted in FIG. 51, utilizing the invention, a provider of an invention-enabled search
23 engine would register 1595 communication addresses with the system of the invention through a
24 user interface or automated data interface with the application. The system would generate a
25 system code 1600 or system code embedded URL which would provide a mechanism with
26 which to initiate calls and would return the system code or system code embedded URL to the
27 user or application interface. System codes may be utilized as stand alone codes or embedded
28 into an Internet URL as below:

29
30 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
31 D80D4AA

32

1 In the example above, each code is a GUID. In the example above, the code is the string
2 of alphanumeric characters appearing after the "=" in the URL. The system code could be
3 utilized without the URL, or other forms of a unique identifier could be used as an alternative.
4 For example, a 10 digit numeric string similar to a traditional telephone number could be
5 assigned to a user and this system code could be used as the identifier which references the
6 user's actual SMS system number and call management rules associated with it.

7 The invention-enabled search engine would then relate 1605 the system code or URL to
8 an appropriate keyword either automatically or by a user entering the relationship into a user
9 interface; the relationship would be stored in a database.

10 Once the relationship between the system code and keyword is established 1605, the
11 invention would be utilized by the search engine to initiate various communications in response
12 to a user entering the specific keyword as discussed in connection with the description of FIG.
13 54.

14 FIG. 52 is a flowchart of the process in the exemplary embodiment of the invention for
15 search engine applications to relate electronic document addresses or URLs generated by the
16 invention to keywords located in search results. In order to provide this capability, search
17 engine must support keywords, and the search results and keyword processing systems of the
18 search engines must be enhanced to provide a method of analyzing search results for keywords
19 and inserting specific electronic document download links as discussed in connection with the
20 description of FIG. 55.

21 As depicted in FIG. 52, utilizing the invention, a provider of a search engine would
22 register 1610 electronic document addresses with the system of the invention through a user
23 interface or automated data interface with the application. The system would generate a system
24 code 1615 or system code embedded URL which would provide a mechanism with which to
25 initiate calls and would return the system code or system code embedded URL to the user or
26 application interface, System codes may be utilized as stand alone codes or embedded into an
27 Internet URL as below:

28
29 <http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA>
30 D80D4AA

31

1 In the example above, each code is a GUID. In the example above, the code is the string
2 of alphanumeric characters appearing after the "=" in the URL. The system code could be
3 utilized without the URL, or other forms of a unique identifier could be used as an alternative.

4 The search engine would then relate 1620 the system code or URL to an appropriate
5 keyword either automatically or by a user entering the relationship into a user interface; the
6 relationship would be recorded on a database.

7 Once the relationship between the system code and keyword is established 1620, the
8 invention can be utilized by the search engine to initiate various communications in response to
9 a user entering the specific keyword as discussed in connection with the description of FIG. 55.

10 FIG. 53 is a flowchart of the process in the exemplary embodiment of the invention to
11 provide search engines a mechanism with which to evaluate search results for keywords and to
12 insert phone call initiation URLs into the search results based on specific keyword relationships
13 to telephone numbers as discussed in connection with the description of FIG. 50. To provide
14 this capability, such search engines must support the use of "keywords". These search engines
15 use their own capabilities, either proprietary or publicly known, to store keywords and related
16 content or actions as is discussed in connection with the description of FIG. 50.

17 A user of a web browser or application would enter a search term into the search input
18 area of an invention-enabled search engine interface 1625; a search input area commonly has an
19 associated search activation online button labeled "Search" or "Go". The search engine would
20 use its own proprietary or publicly known methods to generate a search results set 1630
21 containing web page links, content excerpts, and other information.

22 The search engine would then analyze the result set 1635 for keywords defined as result
23 set keywords as related to system codes or system code embedded URLs discussed in
24 connection with the description of FIG. 50. This analysis would be done before the results are
25 provided to the web server for presentation to the user's web browser.

26 Upon finding one or more keyword matches in the result set, the search engine would
27 insert a phone call initiation URL 1640 generated by the system and related to the keyword into
28 the search results in the form of a hypertext link or button. An example of a call initiation text
29 link as defined in HTML is below:

30

31 <a

32 href="http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA

33 D80D4AA">

1 [http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA](http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4AA)
2 D80D4AA
3

4 As will be understood by someone with ordinary skill in the art, standard HTML can be
5 used to embed call initiation links, graphic links, or form buttons into individual web pages or
6 create code in applications which will generate the same.

7 The search engine would then employ the web server to display the search results to the
8 user, including any embedded call initiation links or buttons 1645. If the user desires, a phone
9 call could be initiated by clicking on a link 1650 embedded by the invention into the displayed
10 search results.

11 FIG. 54 is a flowchart of the process in the exemplary embodiment of the invention to
12 provide search engines a mechanism with which to evaluate search results for keywords and to
13 insert communication initiation URLs into the search results based on specific keyword
14 relationships to communication addresses as discussed in Fig. 51. Such applications must
15 support the use of "keywords. These search engines use their own capabilities, either
16 proprietary or publicly known, to store keywords and related content or actions is discussed in
17 connection with the description of FIG. 51.

18 A user of an invention-enabled web browser or application would enter a search term
19 into the search input area of the invention-enabled search engine interface 1655; a search input
20 area commonly has an associated search activation online button labeled "Search" or "Go". The
21 search engine would use its own proprietary or publicly known methods to generate a search
22 results set 1660 containing web page links, content excerpts, and other information.

23 The invention-enabled search engine would then analyze the result set 1665 for
24 keywords defined as result set keywords as related to system codes or system code embedded
25 URLs as discussed in connection with the description of FIG. 51. This analysis would be done
26 before the results are given to the web server for presentation to the user's web browser.

27 Upon finding one or more keyword matches in the result set, the invention-enabled
28 search engine would insert a communication initiation URL 1670 generated by the system and
29 related to the keyword into the search results in the form of a hypertext link or button. An
30 example of a communication initiation text link as defined in HTML is below:

31

1 <a
2 href="http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA
3 D80D4AA">
4 http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA
5 D80D4AA

6

7 It will be understood by someone with ordinary skill in the art that standard HTML can
8 be used to embed communication initiation links, graphic links, or form buttons into individual
9 web pages or create code in applications which will generate the same.

10 The invention-enabled search engine would then employ the web server to display the
11 search results to the user, including any communication initiation links or buttons 1675. If the
12 user desires to initiate a communication session, the user would click on a link 1680 within the
13 search results.

14 FIG. 55 is a flowchart of the process in the exemplary embodiment of the invention to
15 provide search engines a mechanism with which to evaluate search results for keywords and to
16 insert electronic document download URLs into the search results based on specific keyword
17 relationships to electronic document addresses as discussed in connection with the description of
18 FIG. 52. Such search engines must support the use of "keywords". These search engines use
19 their own capabilities, either proprietary or publicly known, to store keywords and related
20 content or actions as is discussed in connection with the description of FIG. 52.

21 As depicted in FIG. 55, a user of a web browser or application would enter a search term
22 into the search input area of the invention-enabled search engine interface 1685; a search input
23 area commonly has an associated search activation online button labeled "Search" or "Go". The
24 search engine uses its own proprietary or publicly known methods to generate a search results
25 set 1690 containing web page links, content excerpts, and other information.

26 The invention-enabled search engine would then analyze the result set 1695 for
27 keywords defined as result set keywords as related to system codes or system code embedded
28 URLs discussed in Fig. 52. This analysis would be done before the results are given to the web
29 server for presentation to the user's web browser.

30 Upon finding one or more keyword matches in the result set, the search engine would
31 insert an electronic document download initiation URL 1700 generated by the system and
32 related to the keyword into the search results in the form of a hypertext link or button. An
33 example of a electronic document download initiation text link as defined in HTML is below:

1
2 <a
3 href="http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA
4 D80D4AA">
5 http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CA
6 D80D4AA.

7
8 The electronic document download initiation URL could alternatively be the direct
9 address of the electronic document on the Internet.

10 It will be understood by someone with ordinary skill in the art that standard HTML can
11 be used to embed electronic document download initiation links, graphic links, or form buttons
12 into individual web pages or create code in applications which will generate the same.

13 The invention-enabled search engine would then employ the web server to display the
14 search results to the user, including any electronic document download initiation links or buttons
15 1705. If the user desires to initiate an electronic document download, the user would click on a
16 link 1710 within the search results. The description of FIG. 49 refers to methods with which to
17 initiate electronic document downloads from URLs which are not documents, such as the
18 system code embedded URLs.

19 FIG. 56 is a flowchart of the process in the exemplary embodiment of the invention to
20 provide a method of utilizing HTML meta tags in web pages in conjunction with search engine
21 indexing processes to automatically collect phone number, communication addresses, and
22 electronic document address information in stored search engine page information and display
23 phone call, communication, or electronic document download initiation links along with search
24 results.

25 As is well known in the art, meta tags are used for a variety of functions related to
26 display of web pages and search engines or other application analysis and cataloging. Meta tags
27 are not displayed by the browser, although they are part of the HTML that a web server delivers
28 to a web browser. Using meta tags, the invention will provide an automated way for search
29 engines to display communication and electronic document download links within search
30 results.

31 Web pages can be created with meta tags representing phone numbers, communication
32 addresses, or electronic document downloads by using HTML such as in the exemplary format
33 below:

1
2 <META name="phonenum" content="555-555-1234">
3

4 The meta tag field "name" acts as a variable name which must be standardized and
5 expected by the search engine indexing process. The meta tag field "content" contains the value
6 associated with the variable defined by "name". In the above example, the variable
7 "phonenum" would have a value of "555-555-1234". The specific variable name in the meta
8 tag "name" field is important only in that it must be a name that the web server engine index
9 process is programmed to find when scanning web pages. Ultimately a standard variable
10 labeling mechanism adopted by an appropriate standards committee would be preferred.

11 As depicted in FIG. 56, a web site page can be configured 1715 with any combination of
12 meta tags for telephone numbers, communication addresses, and electronic document addresses
13 as follows:
14

15 <META name="phonenum" content="555-555-1234">
16 <META name="videophone" content="12444555666">
17 <META name="documentid" content="http://www.mysite.com/docs/product.doc">
18

19 The above example shows three meta tags with three different types of communication
20 addresses. The tag with "phonenum" contains a fictitious telephone number, the
21 "videophone" tag a fictitious video phone number, and the "documentid" tag the URL of a
22 document which can be downloaded. These meta tags should be included within the <HEAD>
23 section of an HTML document as is required for all meta tags. Content for each communication
24 type should be appropriate for each type of communication method, and the search engine could
25 be programmed to accept one or more formats for each content value. For example the search
26 engine could accept either one of "5555551234", "(555) 555-1234", or "555-555-1234" for
27 valid phonenum tag content or all of those formats.

28 As depicted in FIG. 56, the search engine would analyze 1720 web sites and their
29 associated pages in order to index their content for user searching, and in doing so, the
30 invention-enabled indexing process would search each page for meta tags with variable names
31 as defined for that search engine as standard, for example "phonenum". Upon locating 1725
32 matching meta tags within a page, the search engine would utilize the system of the invention
33 1730 to generate system codes or code embedded URLs for each matching tag and would store

1 1735 the system codes or URLs along with the summary data the indexing engine generates for
2 each page.

3 In response to a user entering a search term into the search engine input box 1740, the
4 search engine would use its standard capabilities to build a result set for the search 1745, which
5 will include system code embedded URLs generated by the system based on the above-
6 described indexing process.

7 The search engine web server would then display the search results 1750 to the user
8 including any communication or document download initiation URLs.

9 FIG. 57 is a flowchart of the process in the exemplary embodiment of the invention to
10 provide a method of utilizing HTML meta tags in web pages in conjunction with search engine
11 indexing processes to automatically collect phone number, communication addresses, and
12 electronic document system code embedded initiation URLs in stored search engine page
13 information and display phone call, communication, or electronic document download initiation
14 links along with search results.

15 Using meta tags, the invention would provide an automated way for search engines to
16 display communication and electronic document download links within search results.

17 Web pages can be created with meta tags representing phone numbers, communication
18 addresses, or electronic document downloads by using HTML in an exemplary format such as
19 below:

20
21 <META name="displaylink" content="
22 http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4
23 AA">

24
25 In the above example, a system code embedded URL is related to the meta variable
26 "displaylink" so that a search engine indexing process can include the link in its saved summary
27 data to be displayed with search results. Another example below shows how a similar meta tag
28 can also include link text for display:

29
30 <META name="displaylink" content="Click to call my company;
31 http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4
32 AA">

33

1 In the above example, link text is embedded in the content, before the “;” separation
2 character, of the variable “displaylink” so that when the search engine displays the link it would
3 offer the user some explanation as to what the link does. The resulting link would appear to the
4 user as “Click to call my company” and the URL would be activated in the user’s web browser
5 if they were to click the link. In the example below, the same link text result is achieved using a
6 meta tag pair, one to include the link text meta variable “displaylinkname”, and another to
7 contain the URL, meta variable “displaylinkURL”:

8
9 <META name=”displaylinkname” content=”Click to call my company”>
10 <META name=”displaylinkURL”
11 content=”http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904C
12 AD80D4AA”>

13
14 The meta tag fields “displaylink”, “displaylinkname”, and “displaylinkURL” act as
15 variable names which must be standardized and expected by the search engine indexing process.
16 The meta tag field “content” contains the value associated with the variable defined by
17 preceding variable name field. The specific variable name in the meta tag “name” field is
18 important only in that it must be a name that the web server engine index process is
19 programmed to find when scanning web pages. Ultimately a standard variable labeling
20 mechanism adopted by an appropriate standards committee would be preferred.

21 The system of the invention would generate system code embedded URLs 1755 for
22 phone numbers, communication addresses, and electronic document addresses through a user
23 interface or an automated method. A web site page could be configured 1760 with any
24 combination of meta tags for telephone numbers, communication addresses, and electronic
25 document addresses as follows:

26
27 <META name=”displaylink” content=”
28 http://jules.dafoink.com/talkRules/callLink.asp?trID=5631EDC86148489C9BFA904CAD80D4
29 AA”>

30
31 As the search engine analyses 1765 web sites and their associated pages in order to index
32 their content for user searching, the invention-enabled indexing process would search each page
33 for meta tags with variable names as defined for that search engine as standard, for example

1 "phonenumber". Upon locating 1770 matching meta tags within a page, the search engine
2 would store 1775 the system code embedded URLs along with the summary data the indexing
3 engine generates for each page.

4 In response to a user entering search terms into the search engine input box 1780, the
5 search engine would use its standard capabilities to build a result set for the search 1785, which
6 will include system code embedded URLs based on the indexing process.

7 The search engine web server would then display the search results 1790 to the user
8 including any communication or document download initiation URLs.

9 FIG. 62 is a flowchart of the process in the exemplary embodiment of the invention to
10 provide a method of utilizing instant messaging ("IM") software and services to automate
11 detection and creation of user accounts within the system of the invention in preparation to
12 initiate telephone calls or other communication sessions. Instant messaging systems provide the
13 capability for users to send text messages between each other with near real time delivery into a
14 software interface that typically displays the results of the user's typing in a scrolling fashion,
15 labeling each user's text. Examples of instant messaging software and services include: AOL
16 Instant messenger, MSN Messenger, Yahoo! Messenger, and ICQ.

17 Within this exemplary embodiment, the invention is integrated with an IM service
18 without modification of the software used by the IM service – to do this, the system of the
19 invention will emulate a user of the IM service. As will be understood by someone with
20 ordinary skill in the art, such user emulation, which is not an object of the invention, can be
21 accomplished using a variety of methods, including a custom engineered solution or use of a
22 third party software development kit.

23 Once user emulation has been configured, the invention will interact with one or more
24 IM systems as an automated agent. The automated agent will have one or more specific IM
25 accounts it will use to communicate with users wishing to communicate via phone or other
26 communications method. One example of such an account and emulation would be use of
27 "callmybuddy" as an IM message address. Any IM messages directed to "callmybuddy" would
28 be intercepted by the emulation and directed to the system of the invention which would prompt
29 and receive input from the user via the IM service.

30 As depicted in FIG. 62, a first time user of the IM communication system provided by
31 the invention opens an IM session with the automated IM agent of the system of the invention
32 1875. The user types in any input into the IM interface and sends it to the automated agent
33 1880. The system receives the user IM system type (AOL, MSN, Yahoo!, ICQ, etc.) name, the

1 user IM name and the transmitted text via the emulation component. The system then searches
2 the user database 1885 for accounts matching the IM system and IM name combination. If an
3 existing account is found, the system of the invention continues the process of initiating a phone
4 call or other communication as discussed in below with respect to the description of FIG. 63.

5 If no account exists, the automated agent sends a registration URL 1890 and brief text
6 instructing the user to click on the link or use it to navigate their web browser to a registration
7 page of the service. Alternative embodiments of the service could automatically generate an
8 account on the user's behalf with default settings or alternately use the IM interface to register
9 the user through various prompt/response cycles. The user utilizes the registration URL 1895 to
10 navigate to a registration page of the system. The navigation page 1900 collects information
11 from the user including: name, address, default telephone number or communication address to
12 relate to the user's account, and payment information. Other embodiments of the invention may
13 collect more or less registration information, and could optionally not require a default phone
14 number or communication address and instead prompt for that at the time of a call or
15 communication session initiation request.

16 Continuing with FIG. 62, the user is prompted 1905 by the system to accept the default
17 communications settings or to modify the settings to suit their needs. The basic communication
18 settings would consist of inbound call management rules supported by the system of the current
19 invention: 1) allow all communications from anyone; 2) deny all communications from
20 anyone; 3) allow those who user authorizes to communicate; 4) deny calls from those on a
21 specific list; 5) ask user at time of communication initiation. Secondary communications
22 settings would define the date, day, and time ranges the user will accept communications from
23 others according to communications from those in separate categorizations of communication
24 initiators: 1) not specifically on a list of authorized communication initiators; 2) on the user's
25 general list of authorized initiators; 3) individually authorized initiators with specific
26 communication limits separate than the general list. The combination of primary and secondary
27 inbound communications settings establishes a flexible rule set for user to control inbound
28 communications. For example, if the system default for the primary setting is to accept
29 communications from all initiators and the secondary setting for the general list of authorized
30 users is 9:00 am – 5:00 pm, Monday through Friday, May 1, 2001 until May 1, 2005 and an
31 initiator on the user's list attempts to communicate at 10:00 am on Saturday, the system will
32 deny the communication. The communication initiation process is further discussed below with
33 respect to the description of FIG. 63.

1 Upon completing the registration 1900 and communication management rules definition,
2 the user is directed by the system to return to their IM client 1910 to interact with the automated
3 agent and initiate a phone call or other communication session with another IM user. The
4 system of the invention supports a variety of communication management rule capabilities
5 which are discussed herein and could be utilized within the context of this embodiment. Other
6 embodiments could also use keyword enabled IM systems to launch communications as
7 discussed above in connection with the descriptions of FIGS. 39, 40, and 42 utilizing the IM
8 user text input area for accepting and processing of keywords.

9 FIG. 63 is a flowchart of the process in the exemplary embodiment of the invention to
10 provide a method of utilizing instant messaging ("IM") software and services to initiate
11 telephone calls or other communication sessions. The process also keeps the phone numbers
12 and communication addresses of the participants private and allows for incoming
13 communication management.

14 Within this embodiment, the invention is integrated with an IM service without
15 modification of the software used by the service, as described above such that the system of the
16 invention will emulate a user of the IM service.

17 As depicted in FIG. 63, an IM user opens an IM session with the automated IM agent of
18 the system of the invention 1915. The user types in any input into the IM interface and sends it
19 to the automated agent 1920. The system receives the user IM system type (AOL, MSN,
20 Yahoo!, ICQ, etc.) name, the user IM name and the transmitted text via the emulation
21 component, then searches the user database 1925 for accounts matching the IM system and IM
22 name combination. If an existing account is not found, the system of the invention continues the
23 process of registering and defining communications settings as discussed above in connection
24 with the description of FIG. 62.

25 Continuing with FIG. 63, if an account exists, the automated agent prompts the user if
26 they wish to use the default phone number or communication address 1930 for this
27 communication session which is registered defined in their account or to use another phone
28 number or address. The user responds by typing "Y" to use their default phone number or
29 communication address, or types an alternate phone number or address and sends the response.
30 Other embodiments may use other prompting scenarios without impacting the end result of
31 obtaining the required phone number or communication address of the user. Other
32 embodiments may also only allow the default phone number or communication address to be
33 used.

1 The system of the invention will then evaluate 1935 the user IM system type (AOL,
2 MSN, Yahoo!, ICQ, etc.) name, the user IM name and the transmitted text via the emulation
3 component initially collected 1920 from the user IM session via the emulation component, to
4 determine if an account exists in the user database related to the communication recipient's IM
5 system and IM name combination.

6 If an account for the communication recipient does not exist, the system of the invention
7 will automatically generate 1940 an account with default communication management rules
8 applied to all such automatically generated recipient accounts. This automatically generated
9 account will require a default setting of "ask user at time of communication initiation" because
10 the system will not have stored a phone number or communication address for the recipient. If
11 the recipient later becomes a user of the system, this account can be converted to a regular
12 account and the communication settings can be managed by the user.

13 The system of the invention then checks the recipient communication settings 1945 as
14 related to their account in the system database to determine if communication is possible
15 between the initiating user and the recipient. Communication is only possible if both the
16 initiator and recipient have registered compatible communication devices. For example the
17 system could deny communication between a video conferencing address and a standard
18 telephone. In the case of incompatibility, the system will notify the initiating user by sending a
19 message to the user's IM session with the automated agent.

20 The system then determines if communication will be allowed according to the
21 communication rules defined either automatically via automatic account generation 1940, or as
22 defined during user registration as discussed above in connection with the description of FIG.
23 62. If the settings 1950 require the recipient to be prompted to authorize the incoming
24 communication, the system will attempt to prompt the recipient using the IM service through the
25 emulated automated agent. If the IM system, through the emulation, reports the recipient is not
26 available, or if the recipient denies the incoming communication, the calling user will be
27 notified 1955 that the communication will not be initiated by sending a text message to the
28 user's IM session with the automated agent including the appropriate reason for not completing
29 it, e.g.: recipient was not available to authorize the communication; recipient is not accepting
30 communication at this time; or the recipient will not accept communication from the initiating
31 user.

1 Upon verifying the communication authorization for the recipient, the system of the
2 invention will initiate 1960 a telephone call or other communication using the phone number or
3 communication address of the initiating user and the recipient.

4 The system of the invention supports a variety of communication management rule and
5 communication initiation capabilities which are discussed herein and which could be utilized
6 within the context of this embodiment. Other embodiments could also use keyword enabled IM
7 systems to launch communications as discussed in connection the description of FIGS. 39, 40,
8 and 42 utilizing the IM user text input area for accepting and processing of keywords.

9
10 EXEMPLARY EMBODIMENT STORED PROCEDURE SUMMARY

11 In the exemplary embodiment of the present invention, a number of stored procedures
12 are provided to perform functions, some of which are described in summary below:

13
14 SpGetDeployItemHistory -- used to return all deployment history for a particular data
15 item in the system.

16 SpGetDeploymentItems -- returns all open deployment items. These are items that have
17 not been deployed or canceled from the deployment queue.

18 SpGetDeploymentItemsByStatus -- returns all deployment items of a particular status.

19 SpGetEmailTemplate -- returns all email template information given the email template
20 name and htmlEmail flag (htmlEmail flag is a tiny int. If it is a 1, the system should return the
21 email HTML version of the template information.

22 SpGetFormItems -- returns all form fields for a particular formID

23 SpGetFormScript -- returns all the formItems given a registrationSourceID and a form
24 name. This is used to populate a collection of structures which is used for the validation, and
25 display of form items (fields).

26 SpGetForms -- returns all forms for a particular registrationSourceID

27 SpGetHelp -- returns a help item assigned to a helpID. This is used for administration
28 and deployment purposes.

29 SpGetHelpByCategory -- used in the help module to return all help items for a particular
30 category.

31 SpGetItemCatsAsStringOUT -- returns a delimited string containing all categoryID's to
32 which an item may be assigned.

- 1 SpGetLOVList -- returns all LOV items for a particular lovTypeID. If an orderIndex is
2 passed with a value of 1, the procedure will order the items by an index in the lov table.
- 3 SpGetLinkCount -- returns the number of links available to a user.
- 4 SpGetLinkCounts -- returns both the number of links left for the user and the number of
5 links used by the user. This procedure will also deactivate any old links that have expired.
- 6 SpGetLinkRule -- returns a ruleID given the linkURL. This will only pass back the
7 ruleID for a link that exists and the ruleID will be the ruleID that is currently valid for the url.
8 In other words, the system will check to see which rule matches the current time/date/etc and
9 will return that ruleID. It will return a null if no valid rule is found for the URL.
- 10 SpGetLinkSchedule -- returns all rules for a particular linkURL
- 11 SpGetLinksByUserID -- returns all links for a particular userID. NOTE: this only
12 passback the link level. No rule information is passed back.
- 13 SpGetLoginByEmail -- given an email address, the system will pass back user
14 information.
- 15 SpGetOverrideRule --not used in exemplary embodiment.
- 16 SpGetPageText-- given a registrationSourceID and pageName, the system will pass back
17 the custom content that matches.
- 18 SpGetPages -- returns all custom content items for a particular registrationSourceID.
- 19 SpGetPaymentReport -- a detailed report which shows all calls, minutes spent, who
20 spent them, minutes paid, and other information linked to calls and the payment for minutes.
- 21 SpGetProductBundle -- returns a bundle information given a bundleID.
- 22 SpGetReferralUserIDLinks -- given a registrationSourceID and a referringUserID, this
23 procedure retrieves all link URL's that match that criteria. This is used for a quick lookup for
24 users who would only have one link in the system. It makes an easy way for external sites to
25 integrate with our system without passing much data back and forth.
- 26 SpGetRegBundles -- this is not used in the exemplary embodiment.
- 27 spGetRegistrationAnonymousBundle --finds the bundle used for anonymous users for a
28 registrationSourceID. If no bundles are found for that registrationSourceID, the system will
29 return the global anonymous user bundle.
- 30 SpGetRegistrationBundles -- get all product bundles assigned to a registrationSourceID.
- 31 SpGetRegistrationMonthCount -- this is a report which shows the number of new users,
32 calls, and minutes spent for this month, last month, and year to date.
- 33 SpGetRegistrationReport -- a report showing registration for a particular date range.

1 SpGetRegistrationSource -- returns all registrationSource information given the
2 registrationSourceID.
3 spGetRegistrationSourceForRule -- given a ruleID, the system will determine the
4 registrationSourceID of the user owning that rule.
5 spGetRegistrationSourceSessions -- returns all sessions for a particular month for a
6 registrationSourceID.
7 spGetRegistrationSourcesForBundle -- returns all registrationSourceID's that are linked
8 to a particular bundle.
9 SpGetReoccurringPayments -- used for monthly rebill. This will return all payments that
10 are due for the month.
11 SpGetRuleInfo -- returns the rule information for a ruleID. It will also cross check to
12 make sure that only the valid user will be able to retrieve the rule.
13 SpGetRuleRegistrationSourceID -- gets the registrationSourceID for the user of a link
14 (given the link URL).
15 SpGetRuleURLForUser -- given the ruleID and the sessionID of a user, it will return the
16 URL for the link attached to that rule and user.
17 SpGetRules -- returns all links and their rules for a particular user. This procedure will
18 also filter out any links which don't have any valid rules attached to them (ie. if the rule dates are
19 older than the current date or if there is no rules at all).
20 SpGetScheduledCalls -- this will return any calls a user has queued up for future
21 connection (ie. the talkrules user wants to schedule a call for a future date and time. This
22 procedure will display any future call that hasnt been placed).
23 SpGetScriptTextByName -- by passing the registrationSourceID and the scriptName, a
24 script, used for integration, will be passed back to the API.
25 SpGetSessionReferralVars -- returns all referral variables (referringUserID, referralVar1,
26 referralVar2, referralVar3, referralVar4, and referringReturnURL) for a sessionID.
27 SpGetSessionReport -- returns all records for the session report.
28 SpGetUserAddress -- regurns an address for a user. If a addressType is passed, it will
29 only return the addresses that match that type for the userID. If no addressType is passed, all
30 addresses will be returned, regardless of type.
31 SpGetUserGroups -- returns all userGroups for a userID.
32 SpGetUserID -- returns a userID for a particular sessionID.

1 SpGetUserIDForLogin -- by passing a username and password, the procedure will return
2 a userID.

3 SpGetUserLinkSummary -- returns all links for a user (by finding out the userID from
4 the sessionID).

5 SpGetUserPermissions -- returns all the user permissions for a userID.

6 SpGetUserRegistrationAccess -- this is used in referral admin. If a user is tagged to a
7 particular registrationSourceID, they will have access to a special referral admin for that
8 registrationSourceID. This is used for affiliates who would need access to reports or other
9 administration functionality for their referralID.

10 SpGetUserSeconds -- this returns the difference between the number of seconds the user
11 has paid for and the number of minutes they have used. The return is the number of seconds
12 they have left in their account.

13 SpLogCallEvent -- This is used to log a call. When a call is placed, information is stored
14 in the callsLog table to track the call.

15 SpLogOff -- this deactivates a session by its sessionID.

16 SpPerformUserLogin -- this will validate and login a user to the system. This is
17 accomplished by passing a username and password. The system will validate that username and
18 password. If they are valid, the system will set the userID of the session to the actual userID,
19 and turn the isGuest flag to 0. NOTE: the userID is the return recordset.

20 SpPerformUserLoginOUT -- this works the same way as spPerformUserLogin except it
21 passes back the sessionID as an OUT variable of the stored procedure. NOTE: the userID is the
22 return recordset.

23 spPerformUserLoginReUseSession -- this will login a user the same way as
24 spPerformUserLogin but it will maintain the existing session even if it is a voided session.

25 SpQueueAffiliateRequest -- this is used for the affiliate signup function. When an
26 affiliate wants to become an affiliate, they fill out a registration form. The data from that form
27 is pushed into this function and then put into a queue for processing.

28 SpReloadSessionPermissions -- This will force a reload of the permissions of a user into
29 the permissionCache. This is done on login (since the user is changing from guest to an actual
30 user) or when the user's permissions are changed.

31 SpRollbackDeployItem -- This is part of the soft deploy module. It will take an already
32 deployed item or an item that has been canceled, and requeue it to be rolled out on the next soft
33 rollout.

1 SpSaveCategory -- inserts or updates a category.
2 SpSaveHelp -- inserts or updates a help item.
3 SpSaveRegistrationSource -- inserts or updates a registrationSource.
4 SpSetAnonymousUser -- this is used to create an anonymous user. Anonymous users
5 are used in the system to accept credit cards without the user having to become an actual user in
6 the system.
7 SpSetUser -- inserts or updates a user record.
8 SpUpdateBundleItem -- inserts or updates a bundleItem.
9 SpUpdateCallStatus -- changes the status of the call stored in the callsLog.
10 SpUpdateCallsLog -- stores additional information in the callsLog. This is primarily
11 used when the system communicates with the outside telco system. Additional information is
12 returned from that outside system and needs to be stored for the called.
13 SpUpdateCard -- inserts or updates a credit card for a user.
14 SpUpdateDeployItem -- part of the deployment module. updates the status for the
15 deployment item. If the status is DON (Done), then the deployDate is set to the current
16 date/time.
17 SpUpdateDeploymentItem -- part of the deployment module. updates a deployment
18 item. This is different than the spUpdateDeployItem since spUpdateDeployItem only updates
19 status and deployDate.
20 SpUpdateForm -- part of the form engine. updates or inserts a form.
21 SpUpdateFormItem -- part of the form engine. updates or inserts a form item (field).
22 SpUpdatePage -- part of the custom content engine. updates or inserts a custom content
23 page.
24 SpUpdateScript -- part of the scripting engine. updates or inserts a script.
25 SpUpdateUserGroups -- by passing a userID and a comma delimited string of the groups
26 to attach to that user, the procedure will first delete the user from its existing groups and then
27 reassign to the groups in the comma delimited string.
28 SpUpdateUserRegistrationAccess -- this will attach a user to a registrationSource. This
29 is used for referral admin where users are assigned to a registrationSource which gives them the
30 ability to perform affiliate administration tasks.
31 SpUseOverrideRule -- this will allow the system to override all links with a "special"
32 rule. All normal links/rules that are attached to the user will not be used. A special Override
33 link/rule will be used instead.

- 1 SpUseSchedule -- not used in exemplary embodiment.
- 2 SpValidateRule -- will make sure that the current rule won't conflict with other rules for
3 the link to which it is attached.
- 4 SpSaveRule -- inserts or updates a rule. This is used by a user when they change or add
5 rules to a link.
- 6 GetCurrentBundleItem -- bundles have a hierarchy where it can be set so that a user can
7 only upgrade their bundle and not be able to downgrade. If the bundles are assigned index, this
8 procedure will pass back the index of the bundle currently assigned to the user.
- 9 SpSaveLink -- inserts or updates a link. A user uses this when they add or modify a link
10 to their account.
- 11 GetScriptLocationByName -- integration scripts in registrationScripts can not only have
12 scripting tied to them but they can also call an external URL. This procedure passes back the
13 proper URL given the registrationSourceID and scriptName. NOTE: If a registrationScript is
14 not found for the passed registrationSourceID, it will look for a default registrationScript and
15 pass that back. This allows a global/override capability. If the default script isn't suitable for the
16 registrationSource, that default script can be overridden specifically for the registrationSource.
- 17 SpSaveUser -- part of the deployment module. This will insert or update a user into the
18 system..
- 19 SpAddBasketItem -- this is part of the ecommerce module. It is used to temporarily
20 store the productBundle the user is purchasing.
- 21 SpSaveAddress -- inserts or updates a user's address.
- 22 SpAddBundle -- inserts or updates a product bundle.
- 23 SpSavePayMethod -- inserts or updates a credit card (or other payment method) for a
24 user.
- 25 SpAddCard -- same as spSavePayMethod.
- 26 SpSaveItemCounter -- itemCounters are used to track the maximum number of links, the
27 maximum number of minutes, and minute thresholds that are available to the user. This
28 procedure saves an itemCounter.
- 29 SpAddLinkMessage -- if an inbound caller is attempting to call a user who doesnt have
30 any valid rules for a link, the inbound caller can send the user a message. This procedure saves
31 the message for future retrieval..
- 32 SpDeleteItemsCountersForUser -- removes all itemCounters for a particular userID.

1 SpAddLoginLog -- each login is tracked on its status. These logins are stored in the
2 loginLog. This procedure sends the login attempt and the outcome of that attempt to this
3 loginLog.

4 SpSaveOrder -- part of the ecommerce engine. When a user has completed their
5 purchase of productBundles, this procedure stores the data into an order record.

6 SpAddPayment -- whenever a card is charged, this procedure stores the transaction into a
7 payment record.

8 SpSaveOrderItems -- part of the ecommerce engine. stores an orderItem into the
9 orderItem record. Each orderItem represents a productBundle that the user has purchased.

10 SpAddQuestionValue -- part of the custom form engine. This stores the values captured
11 on a custom form for the user.

12 SpDeleteAllOrderInfo -- deletes all orderItems and order records for a particular ordered.

13 SpAddRule -- updates or inserts a rule for a link.

14 SpAddSession -- part of session management. This will add a new session to the system.
15 This will be passed from page to page as the user navigates throughout the system..

16 SpAddSessionPermissions -- part of session management. This will load all permissions
17 for the user into the permissionCache. it will pass back a 0 or a 1 (fail or success) into a @result
18 OUT variable.

19 SpAddSurveyItem -- part of the custom form engine. This will add a survey item
20 captured from a custom form for the user.

21 SpAddSessionVariable -- part of session management. Variables and their values can be
22 stored for a session. This procedure will store a variable and their value into the sessionVariable
23 table. If the variable already exists for the session, the system will overwrite that variable's value
24 with the new value.

25 SpGetSurveyForReferralID -- part of the custom form engine. This returns a all survey
26 items captured for a particular referralID.

27 SpAddUserToGroup -- attaches a userID to a particular permission group.

28 SpBundleData -- part of the deployment engine. This will save an item to the
29 deployment queue.

30 SpGetCallsForUserID -- Returns all calls for a userID that are between a beginDate and
31 endDate.

32 SpCancelCall -- cancels a call given the callID

1 spGetCallsForRegistrationSourceID -- returns all calls for a registrationSourceID that are
2 between a beginDate and endDate.

3 spChangeRegistrationQueueStatus -- used in conjunction with the affiliate signup form.
4 An administrator can approval a registration to become an affiliate. This procedure will change
5 the status of the registrationSource to either Queued or to Active (depending on what is passed
6 to the procedure).

7 SpGetSimpleScript -- returns all scripts from the scripts table which matches the
8 scriptName.

9 SpCheckAdminSession -- will return a 1 if the sessionID passed is attached to an
10 administration user. It will return a 0 if it is not an administration user.

11 SpCheckLinkOrder -- checks to make sure that the link actually was created properly
12 through the ecommerce engine. If an order was not attached to the link, a 0 will be returned. If
13 an order was attached to a link, then a 1 will be returned.

14 SpCheckPassword -- this returns a 1 if the sessionID and password are found in the
15 session and user joined tables. It will pass a 0 if it is not found.

16 SpCheckReferralID -- this checks and updates the referral variables for a session.

17 SpCheckSession -- part of the session management. this makes sure that a session is a
18 valid session and updates it if it is.

19 SpCheckSiteAccessOUT -- returns whether a user has permissions to a particular
20 siteLOV. the results are passed back in an OUT parameter as @hasAccess. 0 = no access, 1 =
21 has access.

22 SpCheckUsername -- returns the userID if the userID exists. Will return a null if the
23 userID doesnt exist.

24 SpClonePermissions -- this will take a fromUserID and copy the permissions from that
25 userID to a toUserID.

26 SpCloneUser -- this will take a sessionID and userID parameters and copy the userID to
27 the session if that userID exists in the users table.

28 SpCopyFormItems -- part of the forms engine. this will duplicate all formItems from
29 one form to another.

30 SpCreateOrder -- this will create an order record and all the appropriate orderItems from
31 the basket of the session represented by the sessionID parameter. After the order and orderItems
32 records are created, the basket will be cleaned out.

1 SpDecrementLinkCount -- decrements the number of links the user can have in their
2 itemCounter record for links. The lowest value can be 0.

3 SpDeleteAllFormsForRegSrc -- part of the forms engine. Will delete all forms and
4 formItems attached to a particular registrationSource.

5 SpDeleteLinkRules -- deletes all rules for a given linkID. This will also delete the link.
6 (NOTE: the procedure only deactivates the rules and link. Nothing is actually deleted).

7 SpDeleteRule -- deactivates a particular rule given a ruleID. The procedure also checks
8 the linkID of the rule. If this rule was the last rule attached to the link (ie. if the link no longer
9 has any more rules, that are active, attached to it) it will also deactivate the link.

10 SpEditAddress -- inserts or edits an address.

11 SpGenerateRandomSession -- part of session management. returns a GUID used for a
12 sessionID.

13 SpGetAddress -- returns an address for a user. An addressType is also passed as a
14 parameter. This procedure will only return the address for the user of that particular
15 addressType.

16 SpGetAllCalls -- returns all calls for a particular user.

17 SpGetAllCategories -- returns all active categories.

18 SpGetAllHelp -- returns all help.

19 SpGetAllLinkInfo -- returns all link and rule information for a particular linked.

20 SpGetAllRegistrationSources -- returns all registrationSources. An additional parameter
21 @active is passed. It will return only active registrationSources if a 1 is passed. It will return
22 only inactive registrationSources if a 0 is passed.

23 SpGetAllRules -- will return all links and rules for a user. An additional parameter
24 @ruleType is passed. If an empty string is passed, it will pass back all links and rules for that
25 user. If a type is passed, it will only return rules and links that match that type.

26 SpGetAllSystemValues -- returns all systemConfigVariables names and values.

27 SpGetAllUsers -- returns a recordSet of user information for a user summary listing.
28 Parameters are passed to filter the return.

29 SpGetBasket -- returns the current basket of a user.

30 SpGetBasketTotals -- returns the price value sums of the current basket for a user.

31 SpGetBundleItems -- returns all bundleItems given the bundleID.

32 SpGetBundles -- returns all productBundles that are available to purchase for the user.
33 This depends on which registrationSource (referralID) the user has stored in their session.

- 1 SpGetCCardInfo -- returns all credit card information for a particular user.
- 2 SpGetCallHistory -- returns the call history for a particular user.
- 3 SpGetCallMinuteStatus -- returns a summary of minutes for the user. Items returned: the
- 4 total number of minutes in the user's package, the price per minute, a sum of all minutes paid
- 5 for, a sum of all minutes called, and secondsThreshold.
- 6 SpGetCategories -- returns all categories of a specific type. Also filters by an parameter
- 7 @active (0 returns inactive categories, 1 returns active categories).
- 8 SpGetCategory -- returns a specific category by categoryID.
- 9 SpGetCurrentBundleLevel -- returns the current bundleLevel of a user.
- 10 SpGetCurrentPackage -- returns the current package the user has in their order history.
- 11 SpGetCurrentPaymentMethod -- returns the current credit card that is active in the user's
- 12 payMethods.
- 13 SpGetCurrentRules -- returns ruleInformation for a user.

14

15 EXEMPLARY EMBODIMENT APPLICATION PROGRAMMING INTERFACE

16 In the exemplary embodiment, an Application Programming Interface (API) is provided

17 with which service providers of applications, search engines, and the like can invoke certain

18 functions of the exemplary system of the exemplary embodiment of the present invention. A

19 number of API instruction components in the exemplary API are summarized below.

20

21 1. API Instruction: trLink

22 Links are analogous to a phone number. Users create links in the system which they can

23 then give to other people so that those other people can place a phone call to the user by

24 accessing the link.

25 Links have rules assigned to them (through trRules). These rules will define when a link

26 is usable as well as assign routing features to that link. Depending on which rule is triggered for

27 the link, the caller could be routed to a number defined in the rule. The trLink instruction

28 component can be used with the functions described below..

29 Function getUnusedLinkCount() determines how many links a user has available and

30 uses Parameters: ruleTypeLOV; availableLinks.

31 Function getUsersLinks() returns all links for the current session.

32 Function getLinksByUserID() returns all links given a userID and uses Parameters:

33 inUserID.

1 Function saveLink() saves a link to the database and uses Parameters: linked; userID;
2 linkTypeLOV; URL; active; beginDate; endDate; linkName; linkNote; callOrder.

3 Function getLinkInfoForTRID() takes the link URL and passes back the linked and uses
4 Parameters: trID.

5 Function getLinkNameForTRID() takes the link URL and passes back the linkName of
6 the link and uses Parameters: trID.

7

8 2. API Instruction: trRules

9 The trRules instruction manages rules, which are tied to links. Rules are what defines
10 when a link is accessible as well as where a call is routed. Each rule has its own routing
11 properties. The trRules instruction component can be used with the functions described below.

12 Function getStandardLink() provides access to all global asp values in the web app.

13 Function getCurrentRules() gets all rules for the current day (including day and special
14 dates).

15 Function getRules() gets a specific listing of rules for type and day and uses Parameters:
16 dayLOV. Function getOverrideRule() -- if an override rule is in place, this function will return
17 it; this function uses no Parameters.

18 Function useOverrideRule() will create an override rule which will be used for the user
19 instead of scheduled rules; this function uses no Parameters.

20 Function useSchedule() stops using an override rule and allows the user to utilize their
21 scheduled rules; this function uses no Parameters.

22 Function addRule() adds a rule to the database and uses Parameters: linked; ruleID;
23 ruleTypeLOV; ruleName; beginDate; beginTime; endDate; endTime; ruleURL;
24 takingCallsBool; toNumber; fromNumber; dayLOV; dayListing; overrideCustomLinks;
25 weekdays; whoPays; ruleNote; overrideUserID; callOrder; linkIDOut.

26 Function aveRule() provides a simple method for saving rules that deals with ruleDays
27 and other linked tables; this method deals with the rules table and uses Parameters: ruleID;
28 userID; ruleTypeLOV; ruleName; beginDate; URL; endDate; takingCallsBool; toNumber;
29 beginTime; endTime; dayLOV; active; overrideCustomLinks; fromNumber; ruleNote;
30 whoPays; linked; createdDate; lastUpdatedDate; callOrder.

31 Function validateRule() will validate a rule to make sure it doesn't conflict with another
32 rule for the user; this function uses Parameters: ruleID; ruleTypeLOV; inBeginDate; inEndDate;
33 inBeginTime; inEndTime; dayLOV; weekdays.

1 Function deleteRule() will de-activate the rule given the ruleID parameter for the user;
2 this function uses Parameters: ruleID.

3 Function deleteLinkRules() deletes all rules attached to a link and uses Parameters:
4 linked.

5 Function getLinkRule() will return the current rule for a given link; this function uses
6 Parameters: ruleURL; ruleName; toNumber; fromNumber; errorOut; whoPays; callOrder.

7 Function getRuleURLForUser() gets the URL for the rule of the current user and passed
8 ruleID; this function uses Parameters: ruleID.

9 Function getLinkSchedule() returns all rules attached to a link's URL; this function uses
10 Parameters: URL.

11 Function getRuleInfo() returns all rule information for the current user and the passed
12 ruleID; this function uses Parameters: ruleID.

13 Function getRuleUserID() -- given a ruleID, this function will pass back the userID of
14 the rule's owner; this function uses Parameters: ruleID.

15 Function getAllRules() will return all rules of a given ruleType for the current user. If
16 the ruleType is an empty string, it will pass back all rules for the user, regardless of the rule
17 type. This function uses Parameters: ruleType.

18 Function getRulesForLink() returns all rules given a linked and uses Parameters: linked.

19 Function getLinkCountScenerio() returns the number of links the user currently has, the
20 number of links they are allowed in their package. An overrideUserID can be passed (GUID) if
21 a different userID than the current session's userID is to be used. This function uses Parameters:
22 linked; ruleTypeLOV; linkCount; linksAllowed; overrideUserID.

23 Function getRegistrationSourceID() -- given a linkURL, this returns the
24 registrationSource of the link's owner. This function uses Parameters: trID.

25 Function getAllRuleInfoForLink() -- given a linkID, this returns all rule information.
26 This function uses Parameters: linked.

27 Function getRuleDaysForRule() -- a single rule can be spanned accross different week
28 days; this function will pass back all the rule days for a rule. This function uses Parameters:
29 ruleID.

30

31 3. API Instruction: trCalls

32 The trCalls instruction manages all calls both inbound and outbound. This instruction
33 also handles call status, call termination, call minutes tracking, user minutes tracking, and

1 paying for calls. The trCalls instruction component can be used with the functions described
2 below.

3 Function placeCall() will perform a call for a particular rule. This function uses
4 Parameters: ruleID: (GUID) (to identify the rule to be used); toNumber: (string) (to identify
5 the number being called); fromNumber: (String) (to identify the number from which the call is
6 to be made); pageText: (string) (A byVar parameter which returns information from the
7 telephone company server (In one embodiment, this parameter is not used -- rather the trScript
8 instruction would be used to perform the work for communicating with the telephone
9 company)); outURL: (string) (A byVar parameter which returns the output returned from the
10 script execution of the integration script postToTelco); userID: (GUID) (the userID of the
11 caller); callersEmail: (String) (The email address of the caller); whoPays: (tinyInt) (in one
12 embodiment, this parameter is no longer used). This function Returns: GUID (The callID of the
13 call placed).

14 Function processCallPayment() checks the current payment situation of the userID
15 passed in the callUserID parameter. If that user doesn't have enough money in their account to
16 meet the secondsThreshold, that user current credit card will be charged. This function uses
17 Parameters: callUserID (GUID) (The userID of the user to be processed). This function
18 Returns: Boolean (True if everything goes ok or False if the user doesn't have enough money in
19 their account and the charge to their card failed).

20 Function postToTelco() -- In the exemplary embodiment, this function has been
21 replaced by the trScript API instruction.

22 Function logCallEvent() logs a call to the callsLog table. This function uses Parameters:
23 ruleID (GUID) (the rule that was used to make the call); ruleURL (String) (the link URL that
24 was used by the call page to determine which link to be used); toNumber (String) (the phone
25 number called); fromNumber (String) (the phone number that was called from); eventText
26 (String) (in the exemplary embodiment, this parameter is not used); callType (char(3)) (the
27 typeLOV for the call -- either an INB (inbound) or a CAL (outbound) call); delaySeconds (int)
28 (the number of seconds to delay the call); userID (GUID) (the userID of the person placing the
29 call); callersEmail (GUID) (the email address of the person placing the call). This function
30 Returns: The callID of the call.

31 Function updateCallStatus() updates the status of the callsLog for a called. This function
32 uses Parameters: callID (GUID) (the callID of the call); extSessionID (GUID) (the sessionID of
33 the user placing the call); callDuration (int) (the amount of time spent on the call); callStart

1 (date/time) (the time the call started); callEnd (date/time) (the time the call ended); callNotes
2 (String) (any notes to be stored with the call log); callStatus (char(3)) (updates the
3 callStatusLOV of the callsLog). This function does not return anything.

4 Function cancelCall() calls the disconnect URL of the call identified by the callID. This
5 disconnect URL will notify the telco (the telephone company) to stop the call. This function
6 uses the Parameters: callID (GUID) (the callID of the call to be canceled). This function does
7 not return anything.

8 Function getTodaysCallCount() will return an integer containing a summarized count of
9 calls made for a user on the current day. This count is returned from the call history. This
10 function does not use any Parameters. This function Returns: Integer (the number of calls made
11 on the current day).

12 Function getTodaysCalls() will return a recordset of all calls made today for the user.
13 These calls are returned from the call history. This function does not use any Parameters. This
14 function Returns: recordSet object (all the calls the user has made for the current day).

15 Function getCallHistory() will return all calls for a user for a given daterange and call
16 type from the call history. This function uses Parameters: beginDate (date) (the first day to
17 search for call history); endDate (date) (the last day to search for call history); ruleTypeLOV
18 ((char(3)) (the callTypeLOV to search for call history. NOTE: if a null or an empty string is
19 passed, all call types will be returned for the date range.). This function Returns: recordSet
20 object (containing all calls for a user with matching the criteria passed in the parameters).

21 Function getCallLink() returns the linkID of for the call indicated by that call's called.
22 This function uses Parameters: callID (GUID) (the callID for which to be searched). This
23 function Returns: GUID (the linkID that was used to place the call).

24 Function getCallRule() returns the ruleID of for the call indicated by that call's called.
25 This function uses Parameters: callID(GUID) (the called for which to be searched). This
26 function Returns: GUID (The ruleID that was used to place the call).

27 Function getCallStatus() returns a status from the telco for a particular call. This
28 function uses Parameters: callID (GUID) (the callID to be searched for). This function Returns:
29 String (this is the actual text that is returned from an HTTP post to the telco).

30 Function getDisconnectURL(callID) returns the disconnectURL from the callsLog.
31 This disconnectURL is initially placed in the callsLog when the telco is first notified about a call
32 (the telco returns this URL for the API to use if the call is to be terminated unnaturally). This
33 function uses Parameters: callID (GUID) (the callID to be searched for). This function Returns:

1 String (a URL pointing back to the telco. This URL can be called to terminate a call in
2 progress.).

3 Function disconnectCall() posts to the telco's disconnectURL to terminate a call in
4 progress. This function uses Parameters: called (GUID) (the callID to be searched for). This
5 function Returns: String (the text that is returned from a call from
6 trApplication.trCalls.getCallStatus()).

7 Sub cancelAllCalls() cancels all calls in the queue for the current user of the session.
8 This subfunction does not use any Parameters and does not Return any values.

9 Function checkMinuteLimits() determines the number of minutes needed for a call,
10 minutes threshold, the price per minute, and the number of minutes in the bundle purchased. All
11 of these items are returned in byRef parameters. This function uses Parameters: userID (GUID)
12 (the userID of the user to be checked for minute limits); minutesNeeded (integer) (a byRef
13 variable that returns the number of minutes the user needs to place a call); minThreshold
14 (integer) (a byref variable that returns the number of minutes in the user's minutes threshold);
15 minprice (money) (a byref variable that returns the cost per minute); itemBundleQuantity
16 (integer) (a byRef variable that looks at the productBundle item and returns the number of
17 minutes there). This function Returns: Boolean (true if the number of minutes needed is greater
18 than 0 (ie. The user needs more minutes); false if the user doesn't need any more minutes to
19 place a call).

20 Function getUserSeconds() returns the difference between the number of seconds the
21 user has paid for and the number of seconds they have used. This function uses Parameters:
22 userID (GUID) (the userID to check for the number of seconds they have left). This function
23 Returns: Integer (the number of seconds the user has (number of seconds paid minus the number
24 of seconds used)).

25 Function getCallsForUserID() returns all the calls for a particular userID. This function
26 uses Parameters: userID; beginDate; endDate. This function Returns: recordSet object (returns
27 all the calls for a particular userID).

28 Function getCallsForRegistrationSourceID() returns all calls for a particular
29 registrationSourceID. This function uses Parameters: registrationSourceID (GUID) (the
30 registrationSourceID to return the records for); beginDate (Date) (the beginning date for the
31 search (NOTE: if nothing is passed, then the beginDate will be set for 1/1/1900); endDate
32 (Date) (the ending date for the search criteria (NOTE: if nothing is passed, then the endDate

1 will be set for 12/31/3000). This function Returns: recordSet object (containing all the calls for
2 the registrationSourceID).

3 Function isCallDone() is a simple method to check to see if a call is still in progress or if
4 it is complete. This function uses Parameters: callID (GUID) (the callID of the call to track).
5 This function Returns: Boolean (True if the call has been completed and False if the call is either
6 in progress or if it has not yet been made).

7

8 4. API Instruction: trScript

9 The trScript instruction component is used for 3 functions. First, trScript is used for
10 integration scripts. Integration scripts are scripts that are tied to the registrationSourceID.
11 These are complicated scripts which have 3 scripts to execute for every integrationScript: a.)
12 pre-script: This is a script that the first script executed. It's output is passed to the next
13 step. b.) HTTP post URL. This is a URL that receives the output from the pre-script step and
14 then posts it to an external script via an HTTP post. It's output is passed to the next step. c.)
15 post-script: This is a script that is called after the HTTP post URL. The output of this script is
16 passed back to the calling function.

17 Integration scripts can be inserted throughout the system at various points. An example
18 of an integration point would be when a call is required to be placed. Since integration with
19 external systems is required, the integration scripts are a good choice to customize different
20 interaction, with external systems, tied to a registrationSourceID.

21 There is a default hierarchy so that if there is no integration script for a particular
22 registrationSourceID, a default integration script will be used in it's place.

23 Second, trScript is used for Custom Content. Custom content is a group of content
24 elements tied to a registrationSourceID. These elements are HTML and VBScript combinations
25 that look very similar to ASP pages. These elements are inserted at key points of various pages
26 throughout the system to allow custom content to appear. There is a default hierarchy so that if
27 there is no custom content for a particular registrationSourceID, a default content element will
28 be used in its place.

29 Third, trScript is used as a simple script engine. The simple script engine is an
30 independent scripting system which does not depend on registrationSourceID. Scripts are
31 identified by a script name and a script type. These scripts are used in various parts of the
32 system like: field validation scripts and soft deployment scripts.

33 The trScript instruction component can be used with the functions described below.

1 Function getLocationByName() -- Integration scripts (registrationScripts) --
2 returns the URL that of the script record which matches the scriptName parameter and the
3 registrationSourceID of the current users session. This function is used with Parameters:
4 scriptName (string) (the script to search for). This function Returns:
5 the URL as a string (If no script record is found, an empty string is returned).
6 Function getScriptRecordByName() -- Integration scripts (registrationScripts) --
7 returns the entire script record which matches the scriptName parameter and the
8 registrationSourceID of the current users session. This function uses Parameters: scriptName
9 (string) (the script to search for). This function Returns: a recordset object containing all the
10 scripts matching the criteria.
11 Function executeScript() -- Integration scripts (registrationScripts) -- looks up a script for
12 the current users registrationSourceID, attached to their session, and executes it; passes back the
13 results. NOTE: This function deals with the entire integration script. An integration script
14 includes a pre-script, URL post, and post-script execution. The pre-script is script text that
15 executes and passes its output to the URL post. The URL post then performs an HTTP post and
16 returns its results to the post-script text. The post-script text then executes and passes its output
17 to the output of the function. This function uses
18 Parameters: scriptName (string) (script to lookup); postData (string) (URL encoded query string
19 that is passed to all scripts and URL posts); allowDefaultOverride (tinyInt) (not used in
20 exemplary embodiment); overrideRegistrationID (tinyInt) (not used in exemplary embodiment).
21 This function Returns: String (the results from the post-script execution).
22
23 Function executeSimpleScript() -- Integration scripts (registrationScripts) -- executes an
24 HTTP post to the script location of the scriptName for the current users registrationSourceID of
25 their session. the function returns the text returned from the HTTP post. This function uses
26 Parameters: scriptName (string) (the script to lookup); postData (string) (a URL encoded
27 queryString which is used as the data posted to the script location). This function Returns:
28 String (the output of the HTTP post).
29 Function getScripts() -- Integration scripts (registrationScripts) -- used in administration
30 to list all scripts for a particular registrationSourceID. This function uses Parameters:
31 registrationSourceID (GUID) (the registrationSourceID to be searched). This function Returns:
32 recordSet object (all of the script records matching the registrationSourceID).
33 Function getScriptDetail() -- Integration scripts (registrationScripts) --

1 used in administration to return the script detail information when given a scripted. This
2 function uses Parameters: scripted (GUID) (the scriptID to be searched for). This function
3 Returns: recordSet object (containing all fields for the particular script).

4 Function saveScript() -- Integration scripts (registrationScripts) -- an administration
5 function which inserts or updates a script if the scriptID is not a valid GUID; the function
6 method will assume that the script is a new one and will generate a new scriptID and insert the
7 script. If the scriptID is a valid GUID then the function method will assume that the script is an
8 existing one and perform an update of the script. This function uses Parameters: scriptID
9 (GUID) (the scriptID of the script being saved. If it is null or an empty string, the method
10 assumes that this is a new script); regSourceID (GUID) (the registrationSourceID to be tied to
11 the script); scriptName (GUID) (a unique name for the registrationSourceID so that this script
12 can be searched); scriptLocation (String) (a URL which points to an external script to be executed
13 via an HTTP post); scriptTextParameters (String) (not used in the exemplary embodiment);
14 scriptText (Text) (the actual script for the pre-script code which is executed prior to the
15 scriptLocation HTTP post); postScriptText (Text) (the actual script for the post-script code
16 which is executed after the scriptLocation HTTP post); executionOrder (not used in the
17 exemplary embodiment). This function Returns: String (the output of the postScriptText script
18 execution).

19 Function deleteAllScripts() -- Integration scripts (registrationScripts) -- used in
20 administration to delete all scripts for a particular registrationSourceID. This function uses
21 Parameters: registrationSourceID (GUID) (the registrationSourceID to delete scripts from).
22 This function does not return anything.

23 Function runScript() -- Integration scripts (registrationScripts) -- executes a script
24 contained in the codeToRun. This function uses Parameters: codeToRun (text) (the script code
25 to execute); parameterString (String) (a URL encoded queryString which is passed to the script
26 code as parameters); pageReturnText (text) (a text field which contains text that could of been
27 executed by a previous script). This function Returns: String (the output from the script run).

28 Function deleteScript() -- Integration scripts (registrationScripts) -- an administrative
29 function which will delete a particular script by using the passed scripted. This function uses
30 Parameters: scriptID (GUID) (the scriptID to delete). This function does not return anything.

31 Function parseAspPageForRegID() -- Custom Content (pageText) -- looks up the proper
32 pageText by using the pageName and the registrationSourceID and then executes it. NOTE: If
33 the page is not found for the registrationSourceID, the page with the same name, for the default

1 registrationSource will be used instead. This function uses Parameters: regID (GUID) (the
2 registrationSourceID to lookup); pageName (String) (the pageName to lookup); queryString
3 (String) (a URL encoded query string which should be passed to the script). This function
4 Returns: String (the output of the page that was parsed).

5 Function parseAspPage() -- Custom Content (pageText) -- uses the pageName and the
6 current registrationSourceID of the session of the currently logged in user to find the proper
7 page to parse. It then parses it. NOTE: If the page is not found for the registrationSourceID,
8 the page with the same name, for the default registrationSource will be used instead. This
9 function uses Parameters: pageName (String) (the name of the page to search for); queryString
10 (String) (a URL encoded query string which should be passed to the script). This function
11 Returns: String (the output of the page that was parsed).

12 Function parseAspString() -- Custom Content (pageText) -- takes a passed string and
13 parses it as if it were an ASP page. This function uses Parameters: aspString (Text) (the string
14 that should be parsed like an ASP page); queryString (String) (a URL encoded query string
15 which should be passed to the script to be parsed). This function Returns:
16 String (the output of the string that was parsed).

17 Function getCachedAspPage() -- Custom Content (pageText) -- allows pages to be
18 stored in memory cache instead of querying from the database. By searching for the pageName
19 and the registrationSourceID of the current session of the user the page will be found. NOTE:
20 If the page is not found for the registrationSourceID, the page with the same name, for the
21 default registrationSource will be used instead. This function uses Parameters: pageName
22 (String) (the name of the page to be found); queryString (String) (a URL encoded query string
23 which should be passed to the script to be parsed). This function Returns: String (the output of
24 the string that was parsed).

25 Function getPageText() -- Custom Content (pageText) -- pulls the page from the
26 database by using the pageName and a passed registrationSourceID. The page text is passed
27 back. NOTE: No parsing is done. Only the un-processed code is returned. NOTE: If the page
28 is not found for the registrationSourceID, the page with the same name, for the default
29 registrationSource will be used instead. This function uses Parameters: pageName (String) (the
30 page to be found); regID (GUID) (the registrationSourceID to be found). This function
31 Returns: String (the text to parse).

32 Function doParsing() -- Custom Content (pageText) -- does the actual parsing of the
33 aspText. By passing a string, containing the equivalent of an ASP file, this method will parse it

1 as an ASP file and return the results. This function uses Parameters: aspText (Text) (the string
2 to parse); queryString (String) (a URL encoded query string which should be passed to the script
3 to be parsed). This function Returns: String (the output of the string that was parsed).

4 Function getPages() -- Custom Content (pageText) -- an administration function which
5 returns all pages for a registrationSourceID. This function uses Parameters:
6 registrationSourceID (GUID) (the registrationSourceID to be searched). This function Returns:
7 recordSet object containing all the page records for the provided registrationSourceID.

8 Function deleteAllPages() -- Custom Content (pageText) -- an administration function
9 that will delete all pages for a given registrationSourceID. This function uses Parameters:
10 regSrcID (GUID) (the registrationSourceID for the pages to delete). This function Returns:
11 nothing.

12 Function getPageDetail() -- Custom Content (pageText) -- an administration function
13 that returns a recordset with all the fields for a particular page record. This function uses
14 Parameters: pageID (GUID) (the pageID to search for). This function Returns: recordSet object
15 containing the record that was found.

16 Function savePage() -- Custom Content (pageText) -- an administration function that
17 will save a page into the pageText table. If the pageID is null or an empty string, the page will
18 be assumed to be a new one and a new pageID will be generated and the page will be saved. If
19 the pageID is a valid GUID, then the page will be assumed an existing page and the page will be
20 updated. This function uses Parameters: pageID (GUID) (the unique identifier of the page);
21 regSourceID (GUID) (the registrationSourceID for the page); pageName (string) (the name used
22 to identify the page); pageText (Text) (the actual code to be parsed when executed). This
23 function Returns: the pageID (GUID) if the page is saved successfully or a NULL if not.

24 Function deletePage() -- Custom Content (pageText) -- an administration function used
25 to delete a particular page using a passed pageID. This function uses Parameters: pageID
26 (GUID) (the pageID of the page to be deleted). This function Returns: nothing.

27 Function getDefaultPages() -- Custom Content (pageText) -- returns all pages for the
28 default registrationSource. This function uses no Parameters. This function Returns: recordSet
29 object -- all of the pageIDs and pageNames of the default registrationSource.

30 Function getSimpleScripts() -- Simple Scripting Engine (scripts) -- returns all scripts for
31 a particular script type. This function uses Parameters: scriptType (char(3)) (the
32 scriptTypeLOV to search for). This function Returns: recordSet object that contains all scripts
33 matching the scriptType.

1 Function getScriptByNameType() -- Simple Scripting Engine (scripts) -- returns the
2 script which matches a particular name and particular script type. This function uses Parameters:
3 scriptName (String) (the name of the script to search for); scriptType (char(3)) (the
4 scriptTypeLOV to search for). This function Returns: String (the script code found).

5 Function executeScriptType() -- Simple Scripting Engine (scripts) -- finds the proper
6 script by the scriptName and scriptType and executes it. This function uses Parameters:
7 scriptName (string) (the name of the script to execute); scriptType (char(3)) (the scriptTypeLOV
8 of the script to execute); paramsDict (dictionaryObject) (a dictionary object with the name/value
9 pairs of all parameters to pass to the script). This function Returns: the output of the script.

10

11 5. API Instruction: trCCard

12 Credit cards are one of the internal payment methods of the system. trCCard allows
13 users to manage their credit cards and also is used by the system to charge users for product
14 bundles, monthly rebilling, and minutes. The trCCard instruction component can be used with
15 the functions described below.

16 Function addCard() saves a credit card to the database and passes back the payMethodID
17 to the function. This function is used with Parameters: ccardFName; ccardFName;
18 ccardType;ccardNumber; ccardExpDate; active.

19 FunctionupdateCard() inserts or updates a creditcard to payMethods for a user. This
20 function uses Parameters: ccardID; ccardFName; ccardLName; ccardType; ccardNumber;
21 ccardExpDate; active.

22 FunctiongetCCardInfo() returns all creditcards for the current user of the session; This
23 function does not use any Parameters.

24 FunctiongetCardsLastDigits() returns the last n digits of a credit card. This function uses
25 Parameters: cardNumber; noDigits.

26 FunctionchargeCard() attempts a charge against a credit card. If the charge succeeds, a
27 true is passed back to the function. If it fails, a false is passed back. This function uses
28 Parameters: ccardFName; ccardLName; ccardType; ccardNumber; ccardMonth; ccardYear;
29 addr1; addr2; city; state; zip; country; email; phone1; dollarAmt; comment.

30 FunctionaddPayment() adds a payment to the user's account. This function also calls the
31 chargeCard function to charge the card. This function uses Parameters: dollarAmt; quantity;
32 userID; statusLOV.

1 FunctiongetPayProcessors() will provide a select form field which will display all
2 payprocessors. It will name the select field with the selectName parameter. It will default select
3 an option if it matches the inProcessor parameter. NOTE: in the exemplary embodiment, this is
4 a hardcoded function. This function uses Parameters: selectName; inProcessor.

5 FunctiongetUsersPayMethods() returns all the payMethods for a passed userID. This
6 function uses Parameters: inUserID.

7 FunctionsaveCard() saves a credit card to the payMethod table. This is an independant
8 function and is used for soft-deploy. This function uses Parameters: payMethodID; userID;
9 firstName; lastName; payMethodName; payMethodTypeLOV; payMethodNumber;
10 payMethodExpireDate; createTime; active.

11 FunctionaddItemCounter() will insert an itemCounter into the itemCounter table.
12 NOTE: in the exemplary embodiment, this is a stand alone function and is used for soft-deploy.
13 This function uses Parameters: itemCounterID; userID; bundleItemID; countValue;
14 bundleQuantity; lastPayment; statusLOV.

15 FunctiondeleteItemCountersForUser() deletes all itemCounters for a given userID. This
16 function uses Parameters: userID.

17

18 6. API Instruction: trRegistrationSource

19 Registration sources are the way the system can custom brand itself. There is an entity
20 called a registrationSource (known also as a referralID). trRegistrationSource has a variety of
21 methods which manage registrationSources. It also tracks registrationSources for users as well
22 as other information needing to be connected to a registration source. The trRegistrationSource
23 instruction component can be used with the functions described below.

24 Function getUserRegistrationField() returns a user registration field. These are values
25 stored at the user level when the user registered in the system. The parameter regField is the
26 name of the field to return. The value of the field is returned to the function. This function uses
27 Parameters: regField.

28 Function getSessionRegistrationField() returns a session registration field. These are
29 values stored at the session level when the user initiated their session with the system. The
30 parameter regField is the name of the field to return. The value of the field is returned to the
31 function. This function uses Parameters: regField.

32 Function getAllRegistrationSources() returns a recordset of all registrationSources in the
33 system. the parameter active will limit the returnset by whether the registrationSource is active

1 or not. If a 1 is passed, only active registrationSources will be returned. If a 0 is passed, only
2 inactive registrationSources will be returned. This function uses Parameters: active.

3 Function getRegistrationSource() returns a recordset of all fields for a particular
4 registrationSource that matches the parameter registrationSourceID. This function uses
5 Parameters: registrationSourceID.

6 Function saveRegistrationSource() inserts or updates a registrationSource to the database.
7 This function uses Parameters: registrationSourceID; registrationName; registrationTitle;
8 registrationDescription; infoPageOverride; referralID; logoImage; packageImage; defaultFlag;
9 active.

10 Function queueAffiliateRequest() is used on the affiliate registration page. When
11 someone wants to request to become an affiliate, they fill out a form. The information of that
12 form is pushed to this function and then stored in the database. This function uses Parameters:
13 registrationName; websiteURL; siteDescription; siteCategory; contactFirstName;
14 contactLastName; contactPhoneNumber; contactEmailAddress; contactPassword;
15 confirmPassword; companyName; companyAddr1; companyAddr2; companyCity;
16 companyStateLOV; companyZip; companyCountryLOV; companyPhoneNumber;
17 companyEmailAddress; organizationPhone; organizationFax; organizationSSN;
18 checksPayableTo.

19 Function getAnonymousBundle() returns the anonymous productBundle for a
20 registrationSource. This is used for people who pay for something but arent registered users in
21 the system. This function uses Parameters: registrationSourceID.

22 Function changeRegistrationQueueStatus() changes the status of a registrationSource.
23 This is used when an affiliate is queued in the system waiting for approval. An administrator
24 can change the status from queued to active or from active back to queued. This function uses
25 Parameters: registrationSourceID; statusLOV.

26 Function getRegistrationSourceForRule() returns the registrationSourceID for a rule.
27 This is accomplished by looking up who owns the rule and then returning the
28 registrationSourceID of that user. This function uses Parameters: ruleID.

29 Function getRegistrationBundles() returns all bundles for a particular registrationSource.
30 This function uses Parameters: registrationSourceID.

31

32 7. API Instruction: trOrder

1 When a user purchases a package in the system, that purchase is recorded as an order.
2 trOrder is used primarily for the ecommerce engine of the system which will manage a session's
3 shopping basket as well as a user's order. The trOrder instruction component can be used with
4 the functions described below.

5 Function addBasketItem() adds an item (productBundle) to the session's basket. This is
6 a temporary storage area to hold items until they are purchased (the order is processed). This
7 function uses Parameters: productID.

8 Function processOrder() processes all items in a session's basket and creates an order. If
9 a payment needs to be made against a credit card, the method will charge the card. This
10 function uses no Parameters.

11 Function getBasket() returns a recordSet containing the user's basket items. This
12 function uses no Parameters.

13 Function getCurrentPackage() gets the user's current package (bundle). This function
14 uses no Parameters.

15 Function getLinkCount() counts the number of links the current user of the session has in
16 their account. This function uses no Parameters.

17 Function getOrderTotals() returns the sum of all items in the user's basket as well as
18 paymethod information. This function uses Parameters: callUserID.

19 Function getAllUserOrders() returns a recordset of all orders that the user has processed.
20 This function uses Parameters: callUserID.

21 Function getAllOrderItems() returns all items in a particular order. This function uses
22 Parameters: ordered.

23 Function getUsersItemCounter() returns all itemCounters for a particular user. This
24 function uses Parameters: inUserID.

25 Function saveOrder() is a method used by soft deploy to insert an entire order record.
26 This function uses Parameters: ordered; payMethodID; sessionID; userID; orderDate;
27 statusLOV; processedDate; active.

28 Function saveOrderItems() is a method used by soft deploy to insert an entire orderItem
29 record. This function uses Parameters: orderItemsID; ordered; bundleID; statusLOV; ruleID.

30 Function deleteAllOrderItems() deletes all orderItems and the order that matches the
31 ordered (used by soft deployment). This function uses Parameters: ordered.

32

33 8. API Instruction: trBundle

1 The API instruction component trBundle manages product bundles in the system. Bundles are
2 the product entity which users purchase to be able to gain access to the system and to be charged
3 for minutes. The trBundle instruction component can be used with the functions described
4 below.

5 Function `getBundles()` returns all bundles (only returns active bundles) If the user is a
6 guest, it will return active bundles for the `registrationSourceID` of their session. If the user is not
7 a guest, it will return active bundles for the `registrationSourceID` of their user. This function
8 uses no Parameters.

9 Function `getAllBundles()` returns all bundles (returns all bundles regardless of the active
10 flag). This function uses no Parameters.

11 Function `getBundle()` returns a bundle given the `bundleID` parameter. This function uses
12 Parameters: `bundleID`.

13 Function `addBundle()` is an administrative function which will add a bundle to the
14 database. This function uses Parameters: `bundleID`; `bundleName`; `price`; `description`;
15 `orderIndex`; `registrationSourceID`; `active`.

16 Function `saveBundle()` is an administrative function which will add a bundle to the
17 database (NOTE: this is different from `addBundle` because it doesnt add a `bundleToRegistration`
18 record). This function uses Parameters: `bundleID`; `bundleName`; `price`; `description`; `orderIndex`;
19 `active`.

20 Function `getBundleItems()` returns all `bundleItems` for a given `bundleID`. This function
21 uses Parameters: `bundleID`.

22 Function `getBundleRegistrationSources()` returns all `registrationSources` attached to a
23 bundle. This function uses Parameters: `bundleID`.

24 Function `addBundleItem()` adds a `bundleItem` to a bundle. This function uses
25 Parameters: `bundleItemID`; `bundleID`; `bundleItemType`; `amount`; `price`; `pricePeriod`; `description`;
26 `bundleQuantity`; `roundRobinProduct`; `revShareItem`; `autoRebillLOV`; `deactivationDays`;
27 `reminderEmailDays`; `secondsThreshold`.

28 Function `addBundleToRegistration()` attaches a bundle to a `registrationSource`. This
29 function uses Parameters: `registrationSourceID`; `bundleID`.

30 Function `removeBundleFromRegistration()` removes a bundle from a `registrationSource`.
31 This function uses Parameters: `registrationSourceID`; `bundleID`.

32 Function `removeAllBundlesFromRegistration()` removes all bundles from a given
33 `registrationSource`. This function uses Parameters: `registrationSourceID`.

1
2 9. API Instruction: trUser

3 Users are entities who gain access to the system. A user can either be a person or a
4 software process. Everyone who uses the system is a user (even if they are not logged in). Non-
5 logged-in users have their current session assigned to a default guest user. All users, including
6 guest users, are then tied to groups. Groups are assigned permissions. Depending on the
7 permissions the user has, through their groups, they will be able to gain access to different areas
8 of the system. The trUser instruction component can be used with the functions described
9 below.

10 Function setUser() creates or updates basic user information.. This function uses
11 Parameters: userID; username; password; firstName; lastName; emailAddress; companyName;
12 phone; fax; timeZoneLOV; autoRegistered; active; htmlEmail; allowCallRequests.

13 Function saveUser() saves a user to the database. This is normally used by the soft-
14 deploy engine. This function uses Parameters: tuserStruct.

15 Function getNewPassword() gets called everytime a user requests a password returns
16 new unencrypted password. This function uses Parameters: username.

17 Function getAllUserInfo() returns a disconnected ADO recordset containing user info for
18 the specified users. This function uses no Parameters.

19 Function getAllUserInfoByUserID() returns a disconnected ADO recordset containing
20 user info for the specified users. This function uses Parameters: userID.

21 Function getUserValueByUsernameORExternalUserID() simply returns the column
22 requested for a username + siteID combination in the users table. This function returns
23 Parameters: username; columnName.

24 Function getLoginByEmail() gets a username and password matching an emailaddress.
25 This function uses Parameters: userAddress; username; password.

26 Function getUserInfo() gets the basic user information. This function uses Parameters:
27 ssNum; firstName; lastName; companyName; phone; fax; loginName.

28 Function getUsername() gets the users first name and last name. This function uses
29 Parameters: username.

30 Function getUserValue() gets a specific columns value for the user. This function uses
31 Parameters: columnName.

32 Function checkUsername() checks to see if a username is already in use by another user.
33 If it is, then returns false, otherwise returns true. This function uses Parameters: username.

1 Function clonePermissions() clones all the permissions from one user to the next. All
2 original permissions for the recipient are deleted in the process. When completed they are
3 identical. This function uses Parameters: fromUsername; toUsername.

4 Function getUserEmailByUserID() returns the email address of designated user. This
5 function uses Parameters: userID.

6 Function setSessionUserID() clones all the permissions from one user to the next. All
7 original permissions for the recipient are deleted in the process. When completed they are
8 identical. This function uses Parameters: userID.

9 Function getTimeZone() returns the timezone of the user. This function uses no
10 Parameters.

11 Function getTimeZoneDifference() returns the difference between the user's timezone
12 and the server's timezone (ie. it will return the offset, in hours, of the user's timezone compared
13 to the systems). This function uses no Parameters.

14 Function addUserToGroup() assigns a user to a particular group. This function uses
15 Parameters: userID; groupID; admin.

16 Function addSurveyQuestions() stores a listing of survey questions captured from an
17 online survey. This function uses Parameters: nameListing; valueListing.

18 Function getUsers() returns a recordset of users. if the activeFlag is set to 1, then only
19 active user's will be returned. If set to 0, then only inactive users will be returned. If a typeLOV
20 is passed, then the users will be filtered by the userType. If an empty string is passed, then the
21 userType will not be considered in the filter. If a registrationSourceID is passed, then the users
22 will be filtered by registrationSourceID. If nothing is passed, then registrationSourceID will not
23 be considered in the filter. This function uses Parameters: activeFlag; typeLOV;
24 registrationSourceID.

25 Function getUserRegistrationSourceAccess() returns the registrationSources that a user
26 can administer in affiliate administration. This function uses Parameters: inUserID.

27 Function updateUserRegistrationSourceAccess() gives a user access to a particular
28 registrationSource for affiliate administration. This function uses Parameters: inUserID;
29 registrationSourceID.

30 Function setAnonymousUser() adds an anonymous user to the system by passing all the
31 user information in the userStruct. This is used primarily when a user needs to make a payment
32 without becoming a registered user. This function uses Parameters: userStruct.

1 Function getUserGroups() returns all groups of which a user is a member. This function
2 uses Parameters: inUserID.

3 Function checkUserPermission() checks to see if a user has access to a particular
4 permission. This function uses Parameters: inUserID; permissionLOV.

5 Function updateUserGroups() takes a comma delimited string of groupID's and a userID
6 and gives the user access to all groups in the groupString. It will first remove the user from their
7 existing groups and reassign with the groupString. This function uses Parameters: inUserID;
8 groupString.

9 Function deactivateUserByUserID() sets the user's active flag to 0. This function uses
10 Parameters:inUserID.

11

12 10. API Instruction: trSession

13 Each time a user goes to the site, they are assigned a sessionID which is passed from
14 page to page to track the user throughout their session. The trSession component manages
15 sessions. The trSession instruction component has the Properties described below.

16 CookieExpiration --The time the current session's cookie will expire.

17 CheckCookies -- a Boolean on whether the system should check for cookies when
18 checking the user's sessionID.

19 GiveCookies -- a Boolean on whether to drop cookies on the user's browser.

20 PermissionDict -- a dictionary object containing all permissions for the user of the
21 current session.

22 UserID -- the userID of the current session.

23 Admin -- a Boolean. If true, the user has administration access.

24 IsGuest -- a Boolean. If true, then the user is a guest user and is not officially logged in.

25 FirstName -- the firstName for the user of the current session.

26 LastName -- the lastName for the user of the current session.

27 EmailAddress -- the email address for the user of the current session.

28 HtmlEmail -- whether the user of the current session allows htmlEmail to be sent to
29 them.

30 SessionRegistrationSourceID -- the registrationSourceID of the current session (is set if
31 the session is created with a referralID passed to it).

32 SessionRegistrationSourceName -- the registrationSourceName of the current session (is
33 set if the session is created with a referralID passed to it).

1 userRegistrationSourceName -- the registrationSourceName of the user (not the session.
2 This is set if the user registers from a session that had the referralID passed to it. NOTE: this is
3 user specific and if the user returns to the system, in a different session, with a different
4 referralID passed to it, the userRegistrationSourceName will always be set to the
5 registrationSourceID of the first session's referralID.

6 userRegistrationSourceID -- the registrationSourceID of the user (not the session. This
7 is set if the user registers from a session that had the referralID passed to it. NOTE: this is user
8 specific and if the user returns to the system, in a different session, with a different referralID
9 passed to it, the userRegistrationSourceName will always be set to the registrationSourceID of
10 the first session's referralID.

11 SessionID -- a GUID which uniquely identifies the current session. This sessionID is
12 passed to all pages the user uses throughout their session..

13
14 The trSession instruction component can be used with the functions described below.

15 Function getGuidComponent() checks and sets the sessionID for a user if
16 affiliatedSessionID then also tracks the affiliates sessionID. This function uses no Parameters.

17 Function getRandomGUID() checks and sets the sessionID for a user if
18 affiliatedSessionID then also tracks the affiliates sessionID. This function uses no Parameters.

19 Function checkSession() checks and sets the sessionID for a user if affiliatedSessionID
20 then also tracks the affiliates sessionID. This function uses Parameters: tmpSessionID;
21 tmpUserID; referralID; referralVar1; referralVar2; referralVar3; referralVar4; referringUserID;
22 referringReturnURL.

23 Function checkAdminSession() verifies session for access to admin checks and makes
24 sure that it is not a user side sessionID. This function uses Parameters: tmpSessionID;
25 tmpUserID.

26 Function initPermissions() pulls back all permissionLOV's in the system . This function
27 uses Parameters: sessionID.

28 Function checkPermission() performs the security check for users accesability to each
29 asp page. This function uses Parameters: permissionLOV.

30 Function mungeURL() includes the sessionID in the queryString. This function uses
31 Parameters: URL.

32 Function mungeHiddenInput() is used to pass the sessionID along in forms. This
33 function uses no Parameters.

1 Function getQueryString() returns a query string of all the main global values Starts the
2 string with no & or ?, so you need to add that to your asp file yourself. This function uses no
3 Parameters.

4 Function destroy() -- When this is called, it cleans up after itself and destroys all
5 components, connections, etc. This function uses no Parameters.

6 Function sendNextPage() sends the user to the next page. This function uses Parameters:
7 newURL.

8 Function resetSessionCache() reloads the permissionCache for a session. This function
9 uses no Parameters.

10 Function getSessionReferralVars() returns all referral variables passed to the session.
11 This function uses Parameters: referringUserID; referralVar1; referralVar2; referralVar3;
12 referralVar4; referringReturnURL.

13 Function setRegistrationSourceID() sets the registrationSourceID for the current session.
14 This function uses Parameters: registrationSourceID.

15

16 11. API Instruction: trSurvey

17 The API Instruction component trSurvey handles freeform user entry into the system. In the
18 exemplary embodiment, there are occasions when a non-hardcoded form needs to be inserted
19 somewhere in the system. All data entered into a non-hardcoded form is then processed through
20 the trSurvey component and saved to the database. trSurvey also has reporting methods to
21 display results. The trSurvey instruction component can be used with the functions described
22 below.

23 Function saveForm() saves all survey objects into the surveyItems. A dictionary object
24 is a parameter that contains all the names and values of the items. This function uses
25 Parameters: dictObj.

26 Function setTRApplication() assigns a property to be able to reference the trApplication
27 object model. This function uses Parameters: objIn.

28 Function getSurveyForReferralID() retrieves all surveys saved for a particular referralID.
29 If a beginDate and endDate is passed to the function, then the surveys are further filtered by that
30 date range. This function uses Parameters: referralID; beginDate; endDate.

31 Function convertRequestToDict() converts an ASP request object to a dictionary object.
32 This function uses Parameters: requestObj.

33

1 12. API Instruction: trAddress

2 The API instruction component trAddress manages addresses for a user. The trAddress
3 instruction component can be used with the functions described below.

4 Function getStates() returns all states in the LOV listing table as a recordset. This
5 function uses no Parameters.

6 Function editAddress() either updates an existing address or inserts a new address. This
7 function uses Parameters: addressed; addressTypeLOV; address1; address2; address3; city;
8 state; zip; zipExt.

9 Function saveAddress() saves an address to the database. This is primarily used for the
10 soft deploy engine. This function uses Parameters: addressed; inUserID; addressTypeLOV;
11 address1; address2; address3; city; state; zip; zipext.

12 Function getAddress() returns an address of a particular address type (BUS/HOM/etc.)
13 for the user of the current session. This function uses Parameters: addressType.

14 Function getAddressForUser() returns an address of a particular address type
15 (BUS/HOM/etc.) for a user. This function uses Parameters: userID; addressType.

16

17 13. API Instruction: trFormMgr

18 The API instruction component trFormMgr is a component that manages custom forms.
19 It allows administration to define custom forms for registrationSource's. The component also
20 handles form and field validation and formatting for the user. The trFormMgr instruction
21 component has the Properties described below.

22 FormName -- the name of the form

23

24 The trFormMgr instruction component can be used with the functions described below.

25 Function setRequest() sets a component property to be a dictionary object equivalent of
26 the request object. This function uses Parameters: inRequestObj.

27 Function validateForm() is called by the form page to go through each form item stored
28 in the form structure and then validate each field against what was passed by the form. The
29 function will also replace the field in the form structure with the output of the field script. This
30 function uses no Parameters.

31 Function validateField() will be used to validate a particular field. This function uses no
32 Parameters.

1 Function `initForm()` grabs all the data from the database for the
2 form/`registrationSourceID` pair and populates a structure with the information. This function
3 uses Parameters: `regID`.
4 Function `field()` will return the value of a field. This function uses Parameters:
5 `fieldname`.
6 Function `getForms()` is used in administration to return a listing of all the forms in the
7 system. This function uses Parameters: `registrationSourceID`.
8 Function `deleteAllForms()` deletes all forms attached to a `registrationSourceID`. This
9 function uses Parameters: `regSrcID`.
10 Function `getFormDetail()` is used in administration to return detailed data for a particular
11 form. This function uses Parameters: `formID`.
12 Function `getFormItems()` is used in admin to return all the form elements for a given
13 form. This function uses Parameters: `formID`.
14 Function `addFormItem()` is used in administration to store either an existing form
15 element or adding a new form element. This function uses Parameters: `itemFormItemID`;
16 `itemformID`; `itemFormName`; `itemdateTypeLOV`; `itemScriptID`; `itemRequiredFlag`;
17 `itemItemSize`; `itemMaxLength`; `itemFormItemDescription`; `hideFlag`.
18 Function `deleteFormItem()` is used in administration to delete a form item. This function
19 uses Parameters: `formItemID`.
20 Function `saveForm()` is used in administration to save a form. This function uses
21 Parameters: `formID`; `formName`; `regSourceID`; `formDescription`.
22 Function `deleteForm()` is used in administration to delete a form item. This function uses
23 Parameters: `formID`.
24 Function `fieldSize()` returns the field size of a particular field. This function uses
25 Parameters: `fieldname`.
26 Function `fieldMaxLength()` returns the maximum character length of a particular field.
27 This function uses Parameters: `fieldname`.
28 Function `fieldDescription()` returns the field description of a particular field. This
29 function uses Parameters: `fieldname`.
30 Function `copyFormItems()` copies a form from one `registrationSourceID` to another.
31 This function uses Parameters: `toRegistrationSourceID`; `fromRegistrationSourceID`; `formName`.
32 Function `hideField()` returns the hide flag for a particular field. This function uses
33 Parameters: `fieldname`.

1 Function createField() returns back an HTML formatted field for a particular field. This
2 function uses Parameters: fieldName; fieldType; functionName.

3 Function createFieldHeader() properly formats a field header for output to an HTML
4 page. This function uses Parameters: fieldName.

5 Function addObject() allows a programmer to add an additional object to be accessible by
6 the validation script. This function uses Parameters: objectName; objectVar.

7 Function getDefaultFormNames() returns a list of all forms that have been saved for the
8 default registrationSource. This function uses no Parameters.

9 Function getDefaultFormItemNames() returns a list of all formItems for a particular
10 form for the default registrationSource. This function uses Parameters: formName.

11 Function createGenericForm() will create an HTML form for a particular custom form.
12 This function will just draw each form field/item on the page. This function uses no Parameters.

13

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24 owners.

25

26 **ILLUSTRATIVE EMBODIMENTS**

27 Although this invention has been described in certain specific embodiments, many
28 additional modifications and variations would be apparent to those skilled in the art. It is,
29 therefore, to be understood that this invention may be practiced otherwise than as specifically
30 described. Thus, the embodiments of the invention described herein should be considered in all
31 respects as illustrative and not restrictive, the scope of the invention to be determined by the
32 appended claims and their equivalents rather than the foregoing description.

33

1 WHAT IS CLAIMED IS:

2 1. A method using a computer for managing incoming telephone calls to an
3 individual, said method comprising:
4 controlling incoming telephone calls according to a preference of the individual to take
5 calls according to a set of rules.

6
7 2. A method using a computer for managing incoming telephone calls to an
8 individual, said method comprising:
9 controlling incoming telephone calls according to a schedule of the individual for taking
10 calls according to a set of rules.

11
12 3. A method using a computer for managing incoming telephone calls to an
13 individual, said method comprising:
14 controlling incoming telephone calls according to an identification of callers from whom
15 the individual will accept calls.

16
17 4. The method of Claim 3, said method further comprising:
18 concealing the telephone numbers of a caller and the telephone number of the individual
19 from each other.

20
21 5. A method using a computer for managing incoming telephone calls to an
22 individual, said method comprising:
23 automatically originating a call by an individual according to a designated time delay.

24
25 6. A method using a computer for managing incoming telephone calls to an
26 individual, said method comprising:
27 automatically originating a call by an individual according to a schedule at a specific
28 date and time.

29 7. A method using a computer for managing incoming voice messaging to an
30 individual, said method comprising:
31 controlling incoming voice messages according to a preference of the individual to
32 receive voice messages according to a set of rules.

33

- 1 8. A method using a computer for managing incoming voice messaging to an
2 individual, said method comprising:
3 controlling incoming voice messages according to a schedule of the individual for
4 receiving voice messages according to a set of rules.
5
- 6 9. A method using a computer for managing incoming voice messaging to an
7 individual, said method comprising:
8 controlling incoming voice messages according to an identification of voice message
9 senders from whom the individual will accept voice messages.
10
- 11 10. A method using a computer for managing incoming instant Internet messaging to
12 an individual, said method comprising:
13 controlling incoming instant Internet messages according to a preference of the
14 individual to receive instant Internet messages according to a set of rules.
15
- 16 11. A method using a computer for managing incoming instant Internet messaging to
17 an individual, said method comprising:
18 controlling incoming instant Internet messages according to a schedule of the individual
19 for receiving instant Internet messages according to a set of rules.
20
- 21 12. A method using a computer for managing incoming instant Internet messaging to
22 an individual, said method comprising:
23 controlling incoming instant Internet messages according to an identification of instant
24 Internet message senders from whom the individual will accept instant Internet messages.
25
- 26 13. A method using a computer for managing incoming electronic mail messaging to
27 an individual, said method comprising:
28 controlling incoming electronic mail messages according to a preference of the
29 individual to receive electronic mail messages according to a set of rules.
30
- 31 14. A method using a computer for managing incoming electronic mail messaging to
32 an individual, said method comprising:

1 controlling incoming electronic mail messages according to a schedule of the individual
2 for receiving electronic mail messages according to a set of rules.

3

4 15. A method using a computer for managing incoming electronic mail messaging to
5 an individual, said method comprising:

6 controlling incoming electronic mail messages according to an identification of
7 electronic mail message senders from whom the individual will accept electronic mail
8 messages.

9

10 16. A method using a computer for managing incoming paging service messaging to
11 an individual, said method comprising:

12 controlling incoming paging service messages according to a preference of the
13 individual to receive paging service messages according to a set of rules.

14

15 17. A method using a computer for managing incoming paging service messaging to
16 an individual, said method comprising:

17 controlling incoming paging service messages according to a schedule of the individual
18 for receiving paging service messages according to a set of rules.

19

20 18. A method using a computer for managing incoming paging service messaging to
21 an individual, said method comprising:

22 controlling incoming paging service messages according to an identification of paging
23 service message senders from whom the individual will accept paging service messages.

24

25 19. A computer system for initiating communications between two devices, said
26 system comprising a set of computer instructions for:

27 generating a unique communication initiation system code corresponding to a first
28 communications address; and

29 identifying a data relationship between the generated unique communication initiation
30 system code and a designated identifier.

31

32 20. The computer system of Claim 19, said system further comprising a set of
33 computer instructions for:

1 storing the data relationship on a database.

2

3 21. The computer system of Claim 20, said system further comprising a set of
4 computer instructions for:

5 retrieving the stored data relationship in response to a user input of the designated
6 identifier.

7

8 22. The computer system of Claim 21, said system further comprising a set of
9 computer instructions for:

10 displaying for user selection a selection mechanism for initiating a communications
11 session between the first communications address and a second communications address
12 corresponding to the user.

13

14 23. The computer system of Claim 22, said system further comprising a set of
15 computer instructions for:

16 initiating a communications session between the first communications address and the
17 second communications address corresponding to the user in response to a user selection of the
18 displayed selection mechanism.

19

20 24. The computer system of Claim 19 wherein the first communications address is a
21 telephone number.

22

23 25. The computer system of Claim 19 wherein the first communications address is an
24 electronic document address

25

26 26. The computer system of Claim 19 wherein the unique communication initiation
27 system code is a globally unique identifier.

28

29 27. The computer system of Claim 19 wherein the designated identifier is a keyword.

30

31 28. The computer system of Claim 19 wherein the designated identifier is a Domain
32 Name Service (DNS) host entry name.

33

1 29. The computer system of Claim 23 wherein the communications session
2 comprises an electronic download of an electronic document stored at the first communications
3 address.

4
5 30. The computer system of Claim 19, said system further comprising a set of
6 computer instructions for:
7 evaluating a search result set returned in response to a user search request.

8
9 31. The computer system of Claim 30, said system further comprising a set of
10 computer instructions for:
11 identifying an occurrence of the designated identifier; and
12 retrieving the stored data relationship in response to a user input of the designated
13 identifier.

14
15 32. The computer system of Claim 31, said system further comprising a set of
16 computer instructions for:
17 displaying for user selection a selection mechanism for initiating a communications
18 session between the first communications address and a second communications address
19 corresponding to the user.

20
21 33. The computer system of Claim 32, said system further comprising a set of
22 computer instructions for:
23 initiating a communications session between the first communications address and the
24 second communications address corresponding to the user in response to a user selection of the
25 displayed selection mechanism.

26
27 34. The computer system of Claim 32, said system further comprising a set of
28 computer instructions for:
29 inserting a selectable online display of said selection mechanism into an online display
30 of the search result set.

31

1 35. A computer system for automatically inserting selectable online communications
2 initiation displays into search result displays, said system comprising a set of computer
3 instructions for:

4 extracting a first communications address from a web page with a meta tag that identifies
5 the first communications address as a communications address.

6

7 36. The computer system of Claim 35, said system further comprising a set of
8 computer instructions for:

9 generating a unique communication initiation system code corresponding to the first
10 communications address.

11

12 37. The computer system of Claim 36, said system further comprising a set of
13 computer instructions for:

14 identifying a data relationship between the generated unique communication initiation
15 system code and the web page.

16

17 38. The computer system of Claim 37, said system further comprising a set of
18 computer instructions for:

19 displaying in response to a user search request a search result set comprising a search
20 result entry corresponding to the web page as a member of the search result set; and

21 inserting in the search result set entry for the web page a selection mechanism
22 corresponding to the generated unique communication initiation system code for initiating a
23 communications session between the first communications address corresponding to the search
24 result set member and a second communications address corresponding to the user.

25

26 39. The computer system of Claim 38, said system further comprising a set of
27 computer instructions for:

28 initiating a communications session between the first communications address and the
29 second communications address corresponding to the user in response to a user selection of the
30 displayed selection mechanism.

31

32 40. The computer system of Claim 35 wherein the first communications address is a
33 uniform resource locator address.

1 41. A computer system for automatically inserting selectable online communications
2 initiation displays into search result displays, said system comprising a set of computer
3 instructions for:

4 generating a unique communication initiation system code corresponding to a first
5 communications address; and

6 inserting the generated communications initiation system code into a web page with a
7 meta tag that identifies the generated communications initiation system code as a
8 communications initiation system code.

9
10 42. The computer system of Claim 41, said computer system further comprising a set
11 of computer instructions for:

12 extracting the generated communications initiation system code from the web page.

13

14 43. The computer system of Claim 42, said computer system further comprising a set
15 of computer instructions for:

16 identifying a data relationship associating the extracted communication initiation system
17 code with the web page; and

18 storing the data relationship in a database.

19

20 44. The computer system of Claim 42, said system further comprising a set of
21 computer instructions for:

22 displaying in response to a user search request a search result set comprising a search
23 result entry corresponding to the web page as a member of the search result set; and

24 inserting in the search result set entry for the web page a selection mechanism

25 corresponding to the extracted communication initiation system code for initiating a

26 communications session between the first communications address and a second

27 communications address corresponding to the user.

28

29 45. The computer system of Claim 44, said system further comprising a set of
30 computer instructions for:

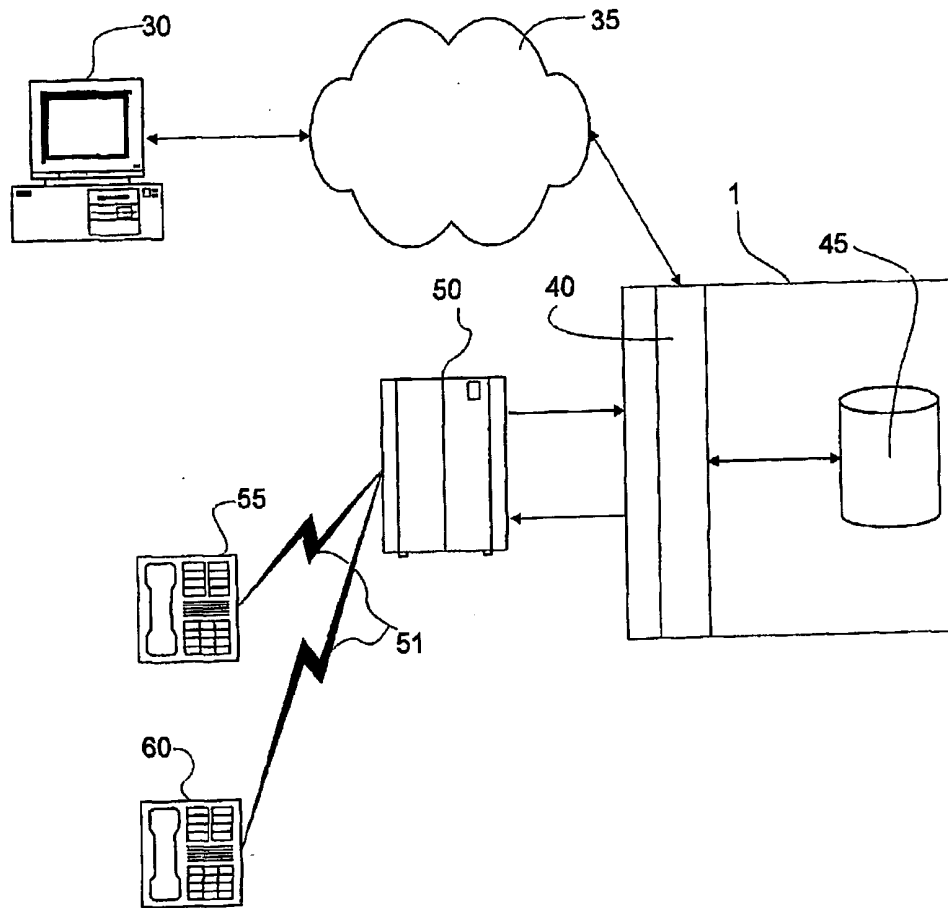
31 initiating a communications session between the first communications address and the

32 second communications address corresponding to the user in response to a user selection of the

33 displayed selection mechanism.

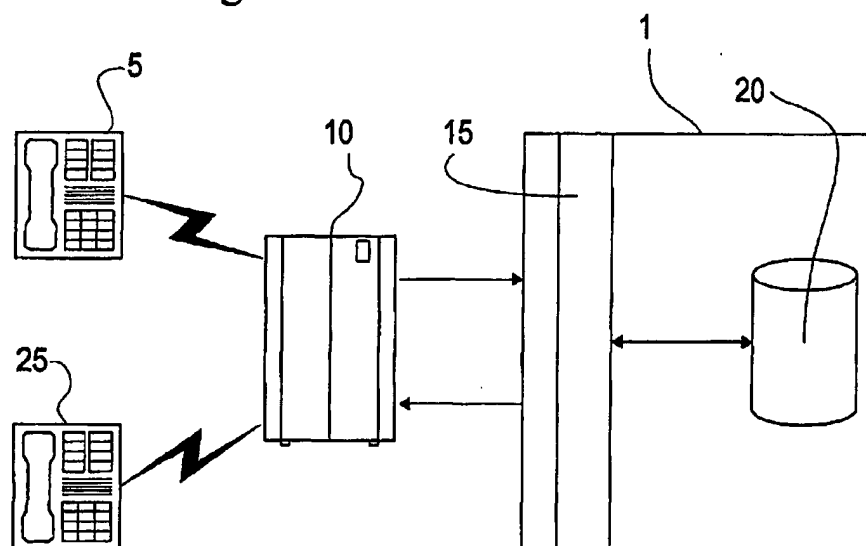
1/63

Fig. 1



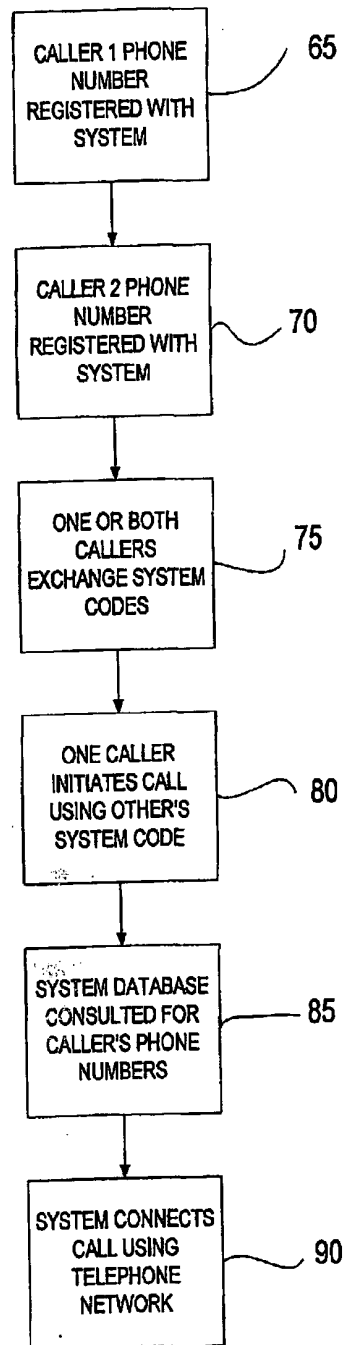
2/63

Fig. 2



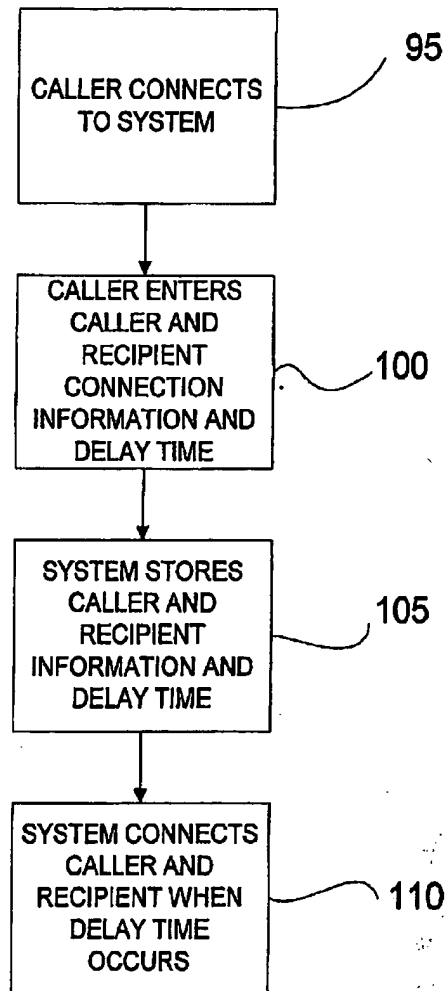
3/63

Fig. 3



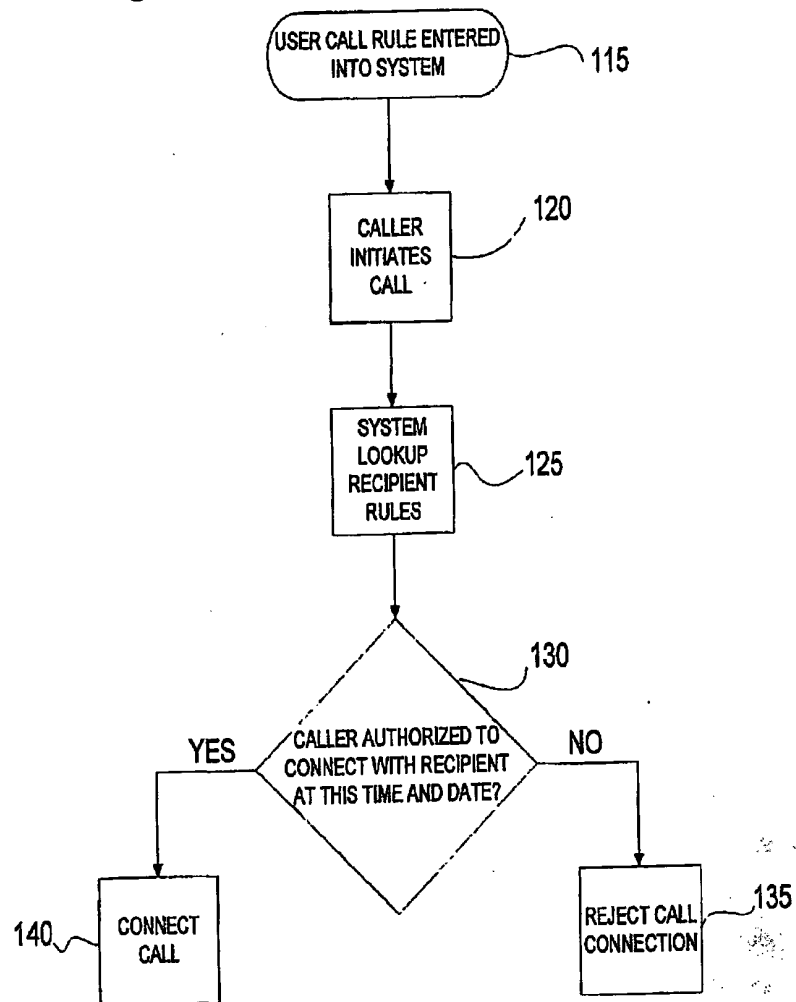
4/63

Fig. 4



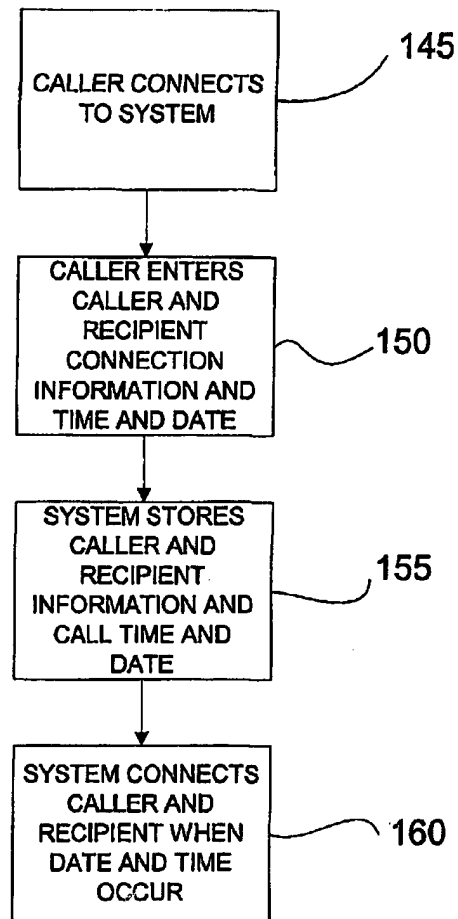
5/63

Fig. 5



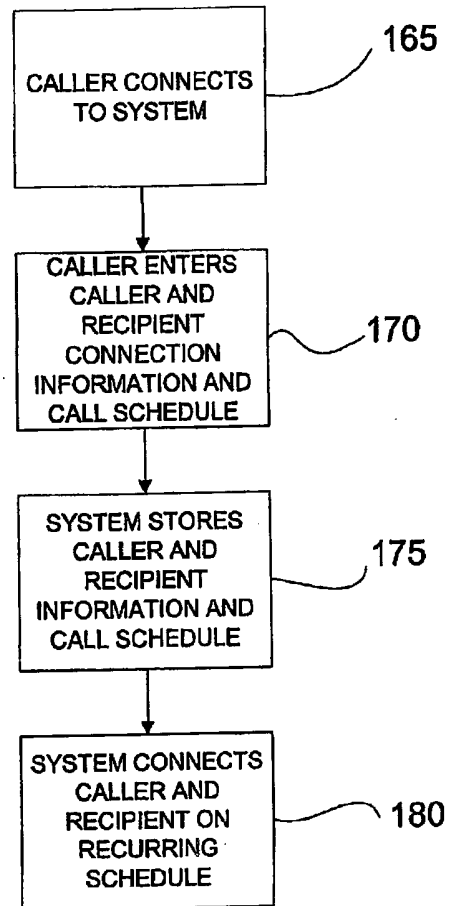
6/63

Fig. 6



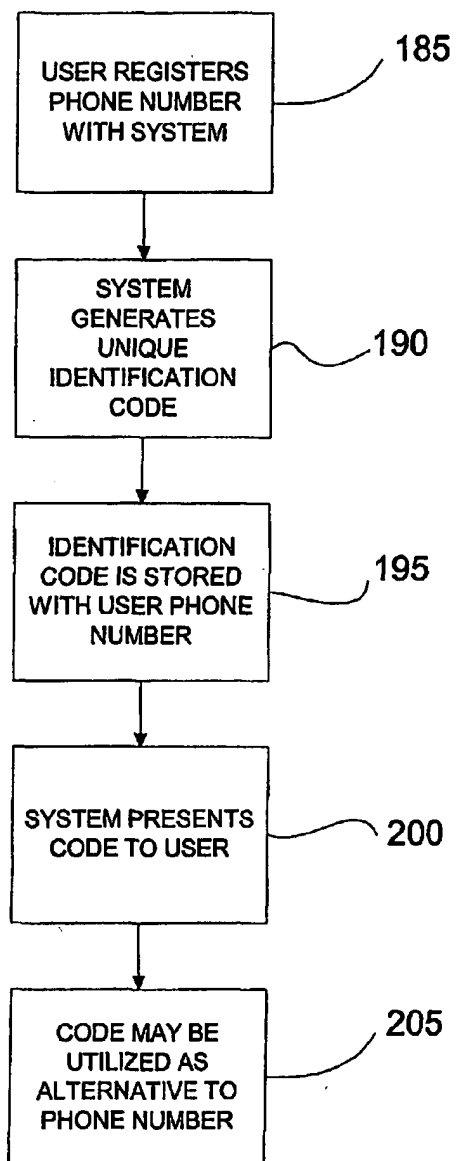
7/63

Fig. 7



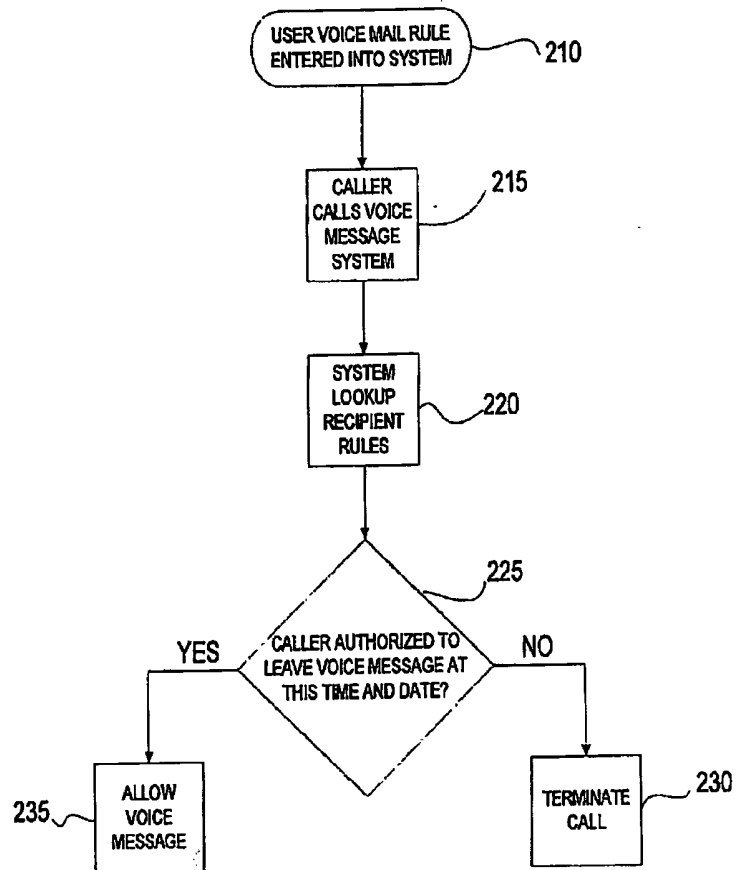
8/63

Fig. 8



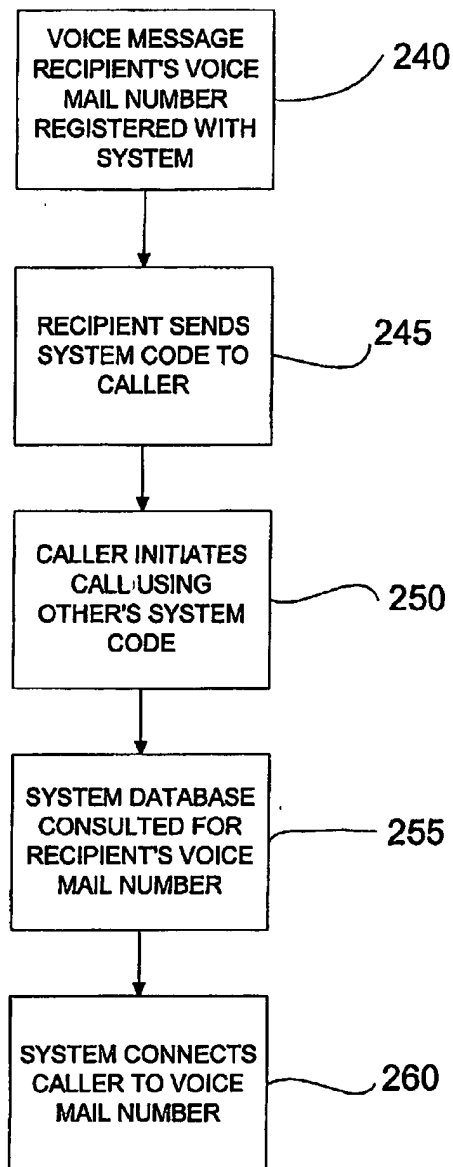
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Fig. 9



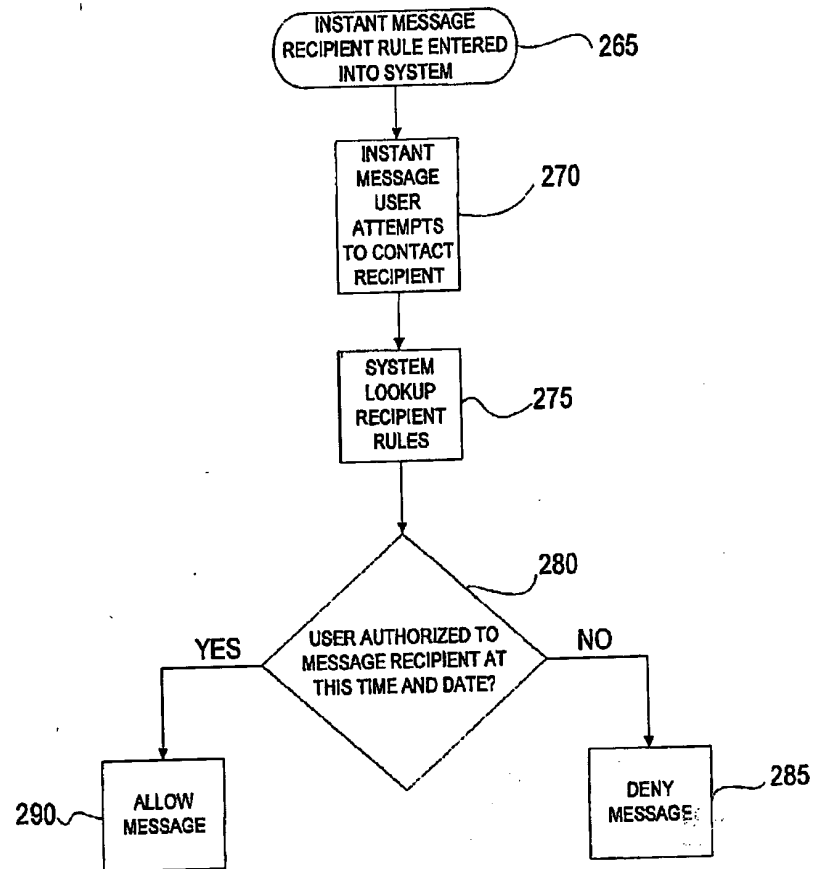
10/63

Fig. 10



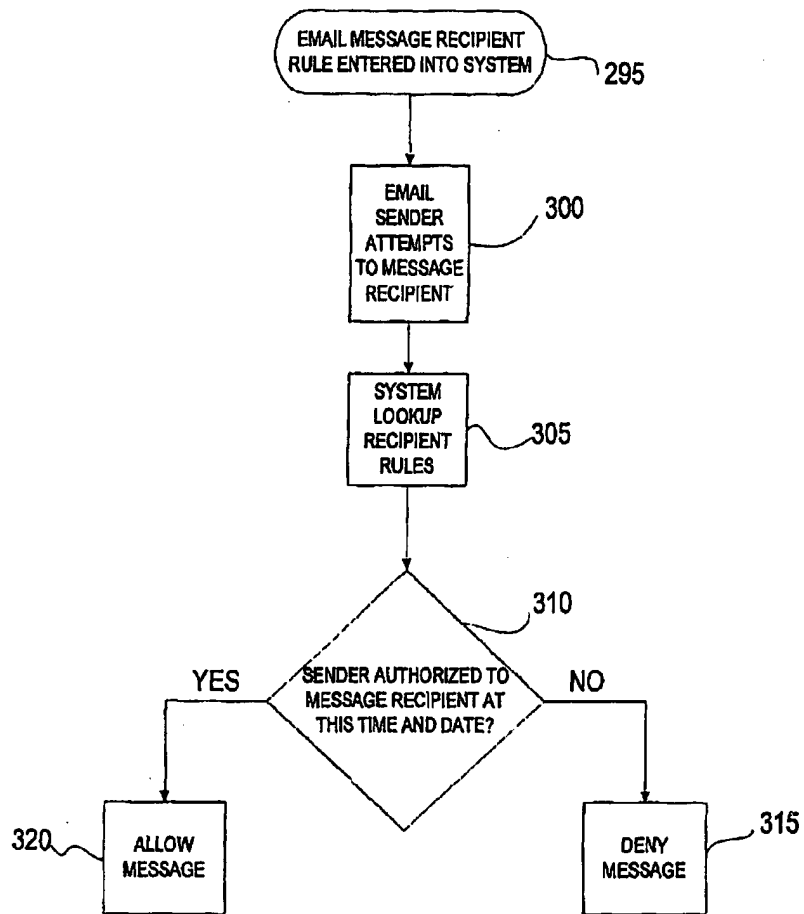
11/63

Fig. 11



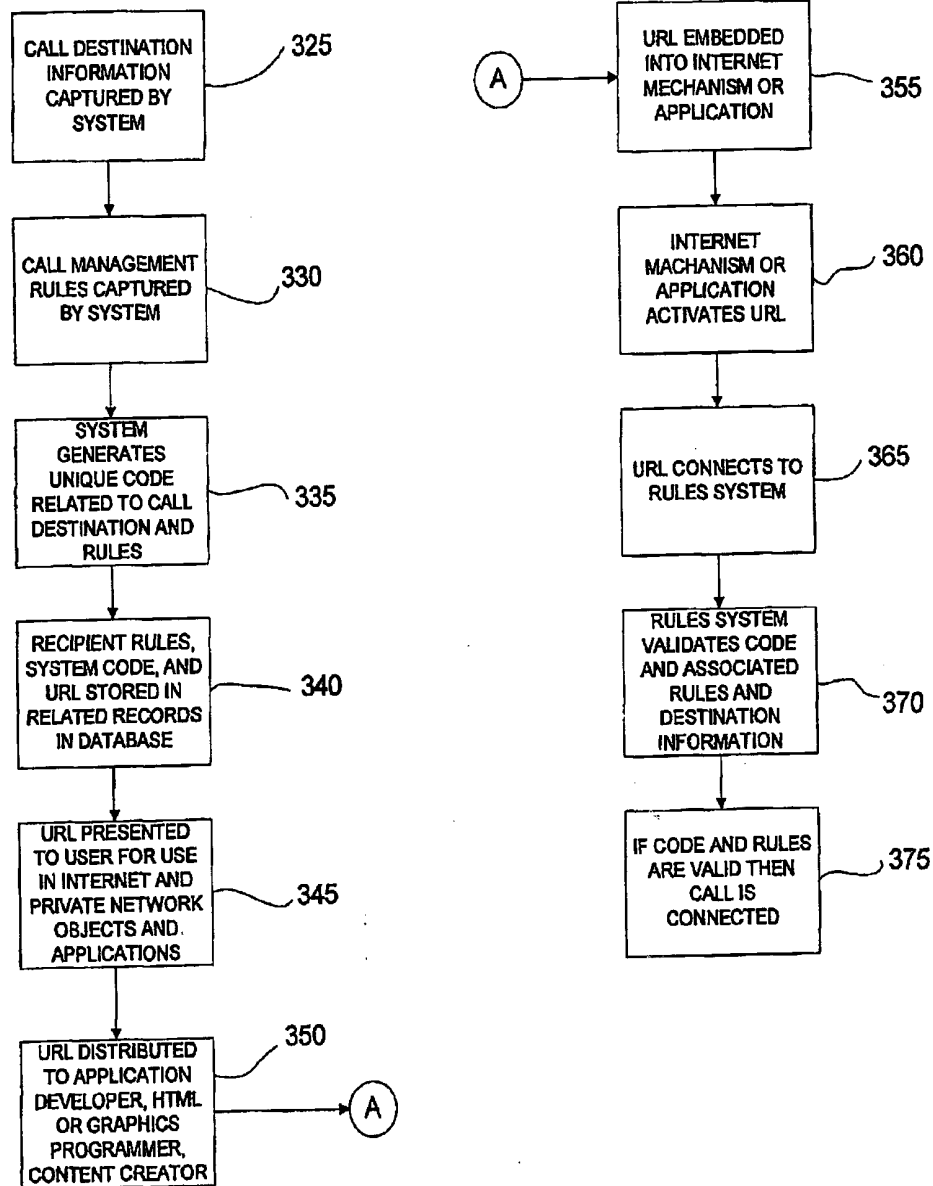
12/63

Fig. 12



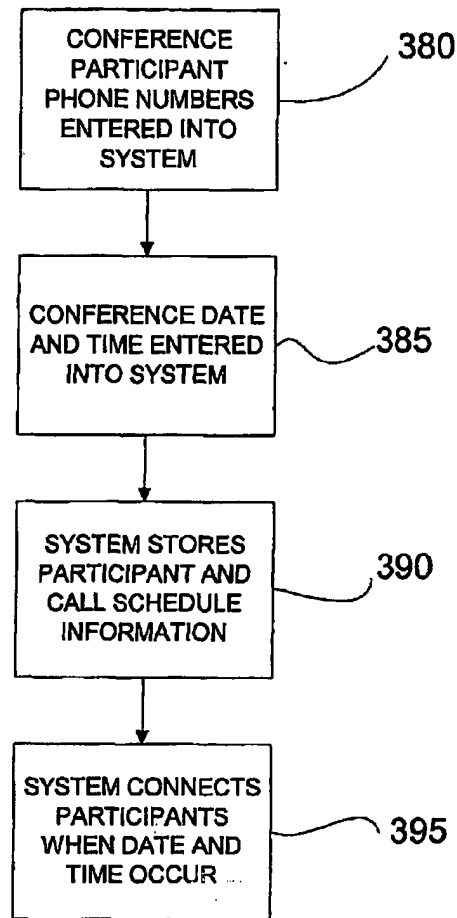
13/63

Fig. 13



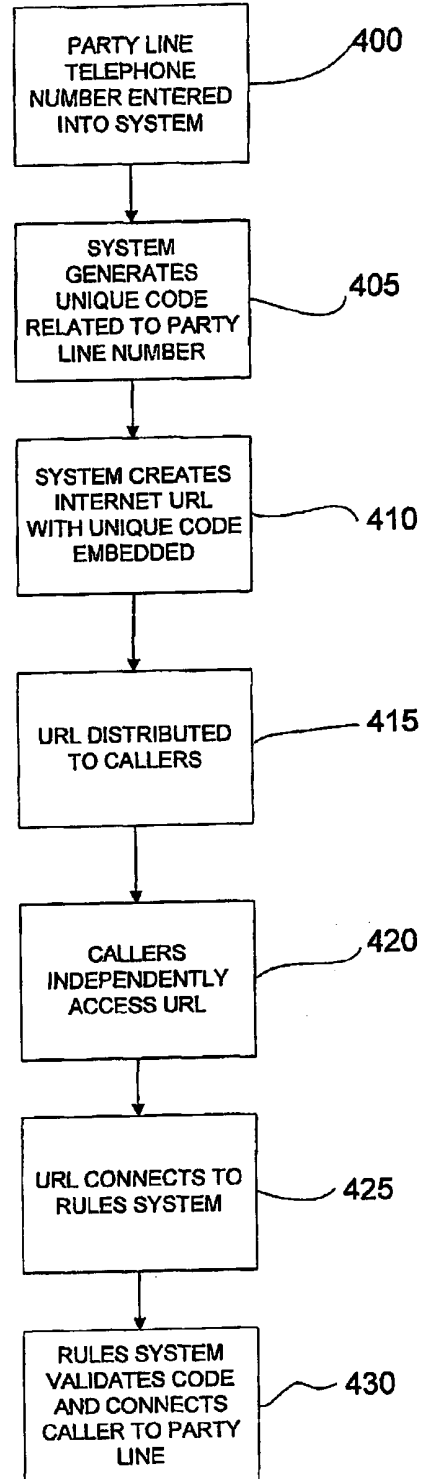
14/63

Fig. 14



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Fig. 15



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Fig. 16

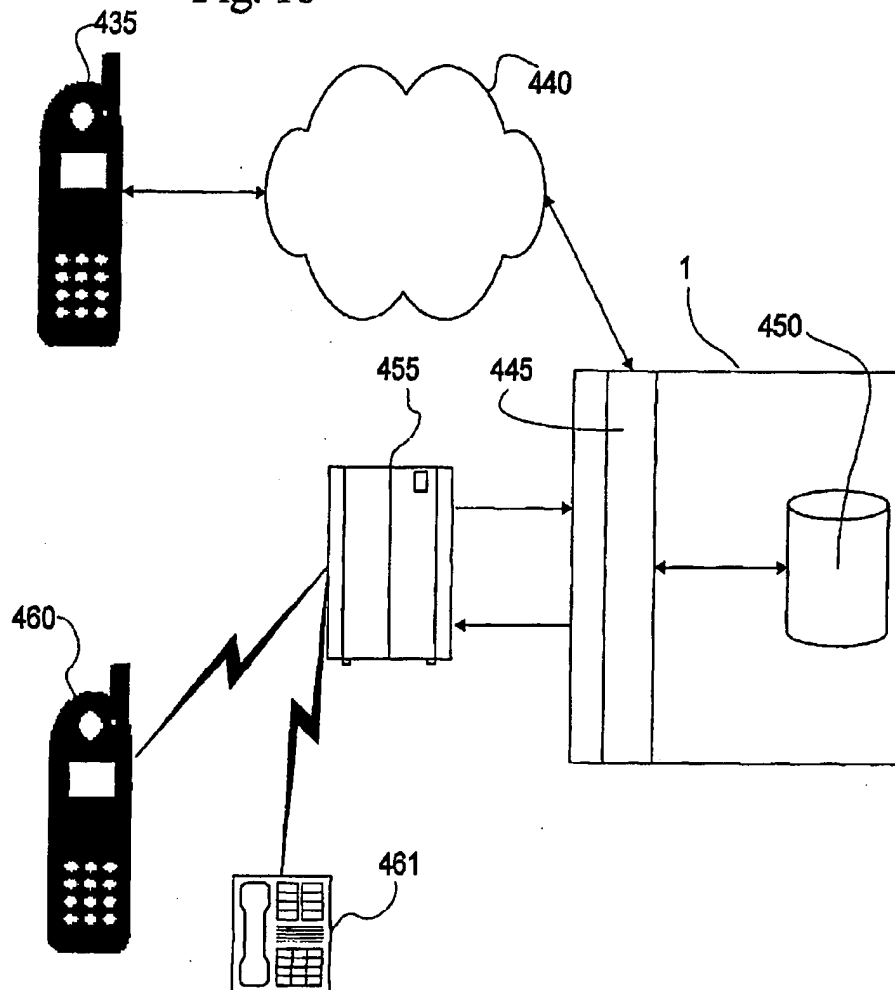
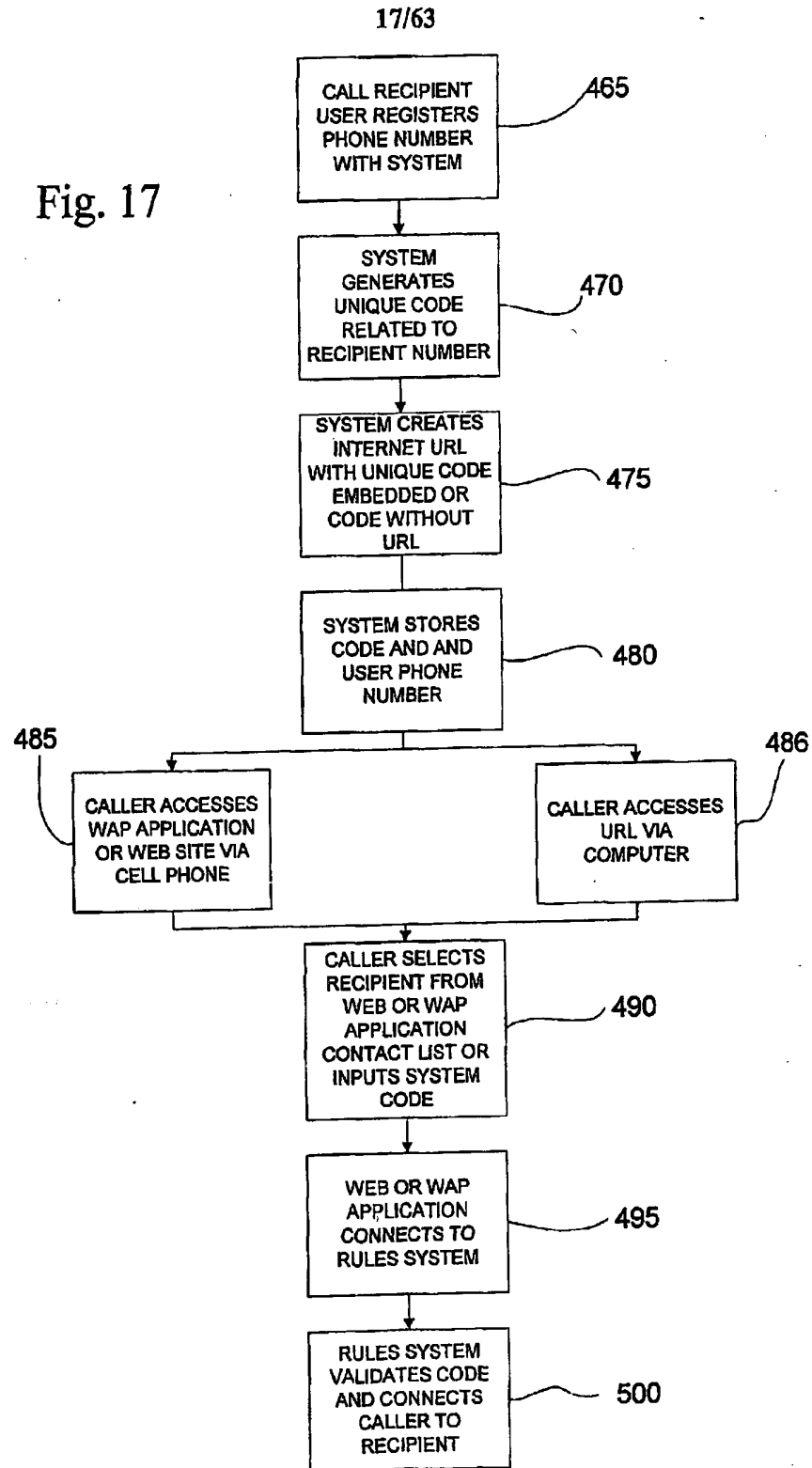


Fig. 17



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Fig. 18

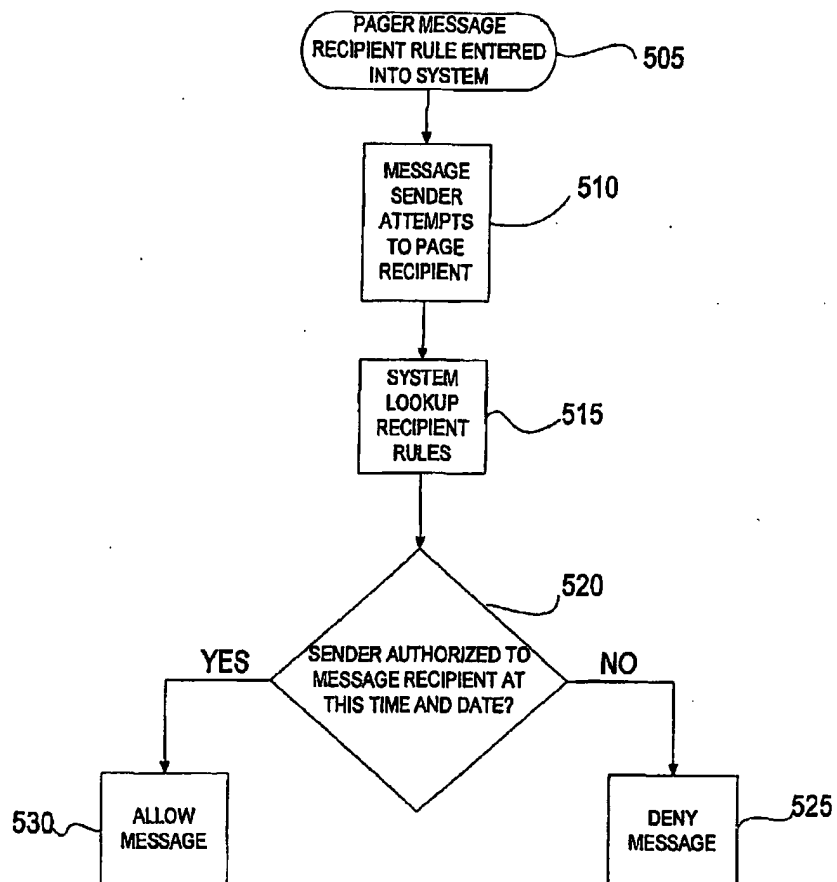
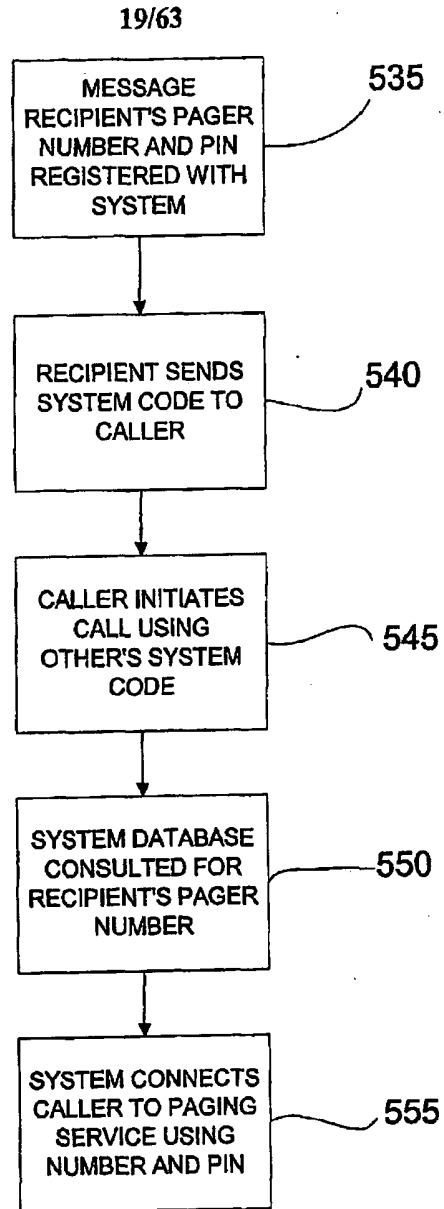
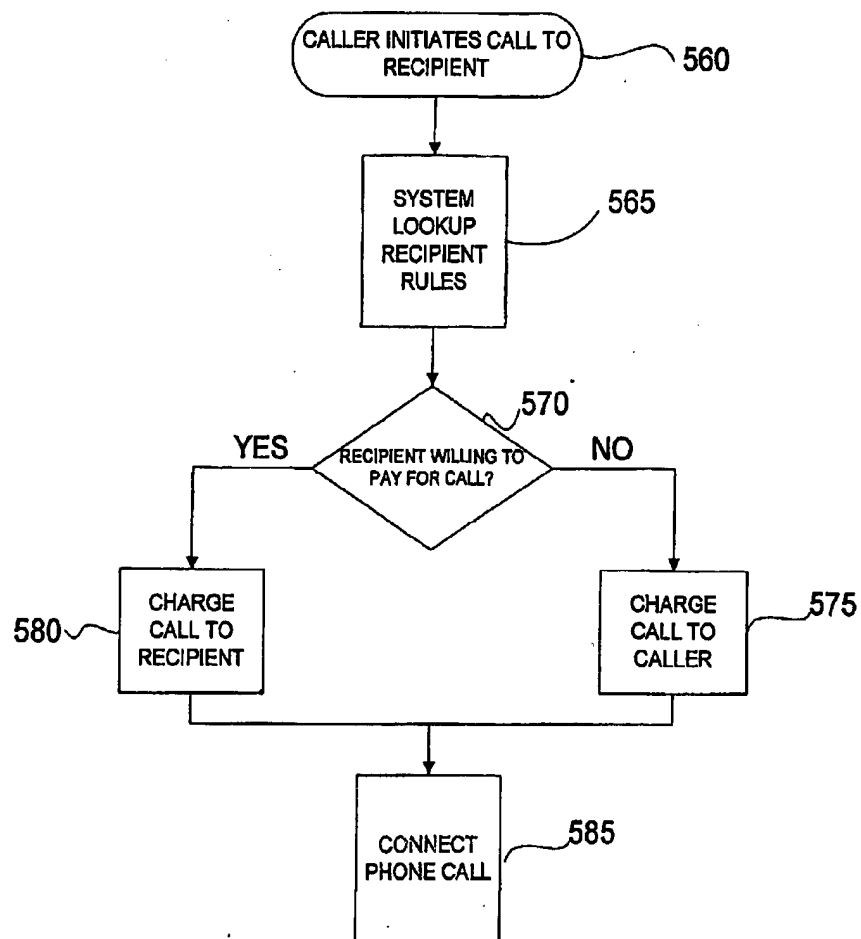


Fig. 19



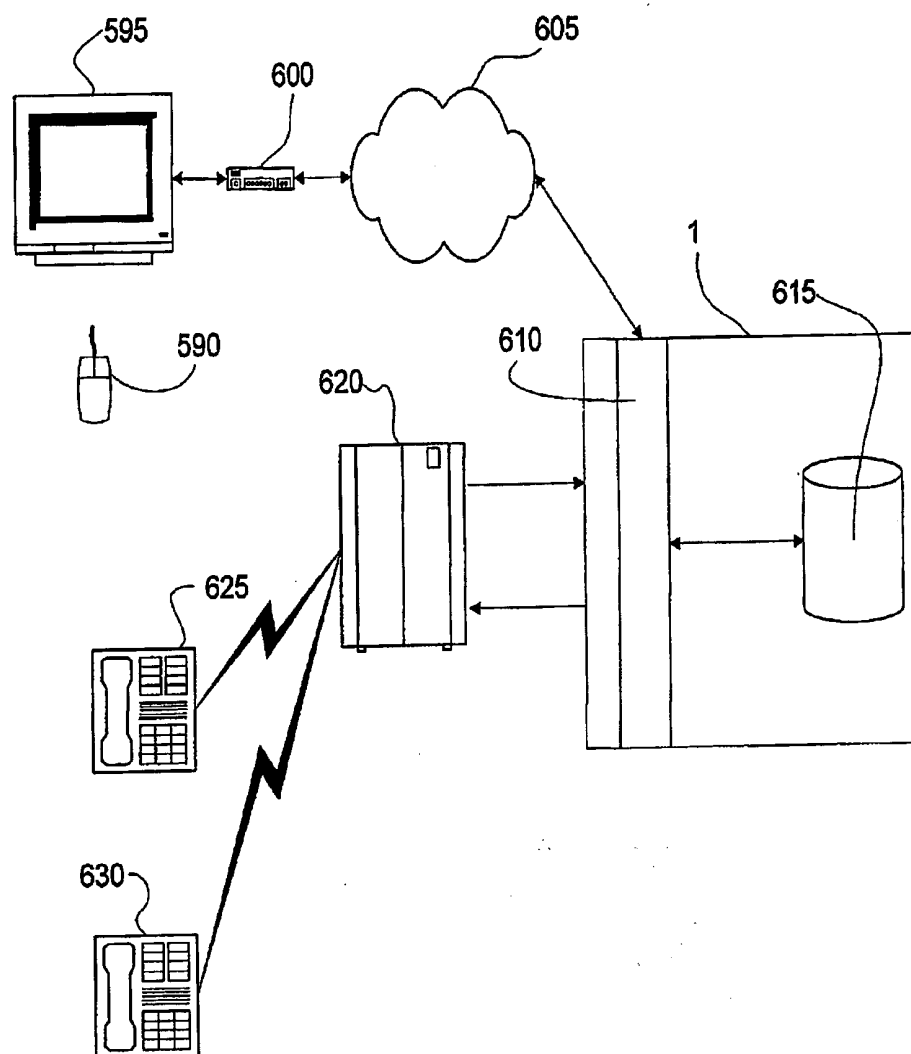
20/63

Fig. 20



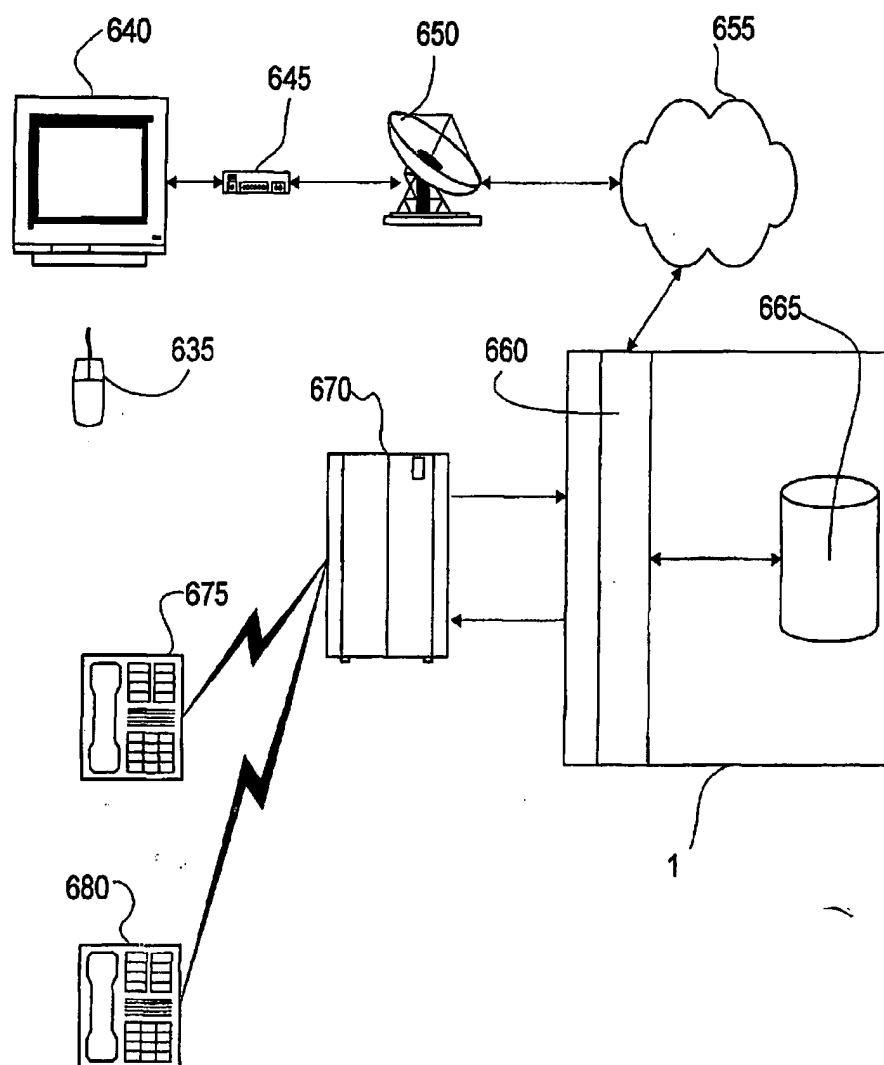
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Fig. 21



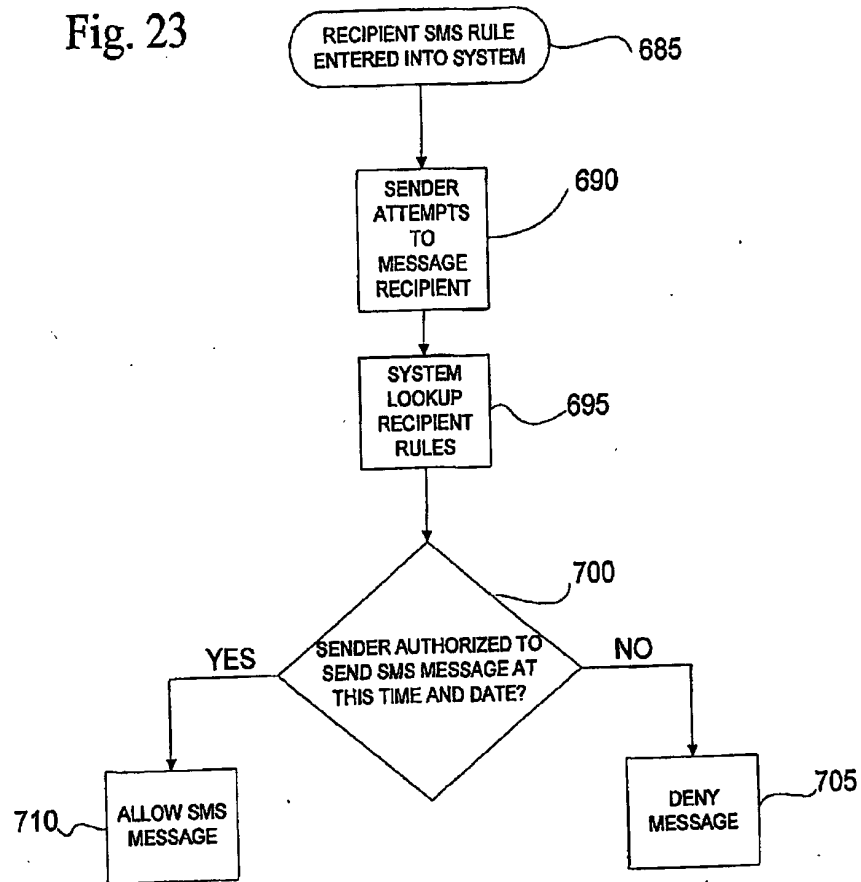
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Fig. 22



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Fig. 23



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Fig. 24

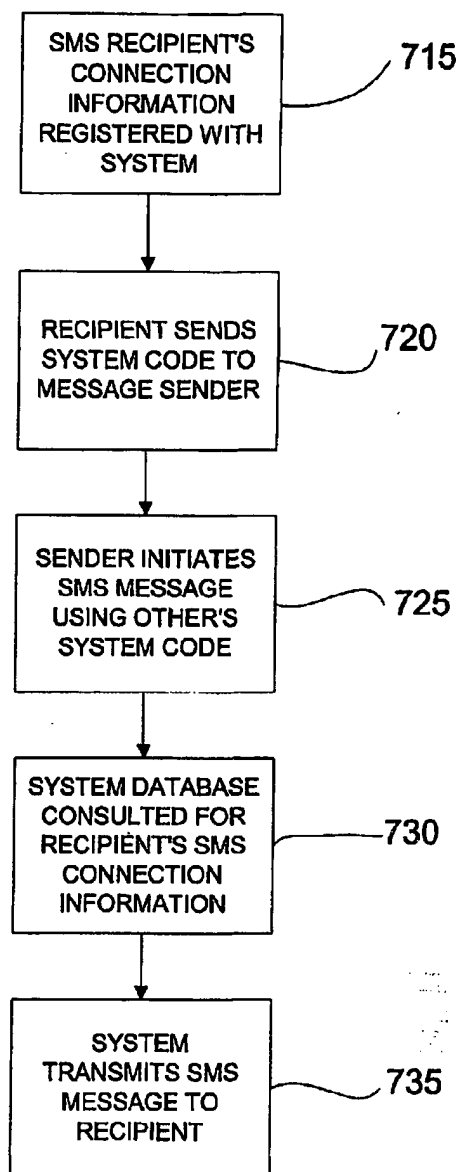
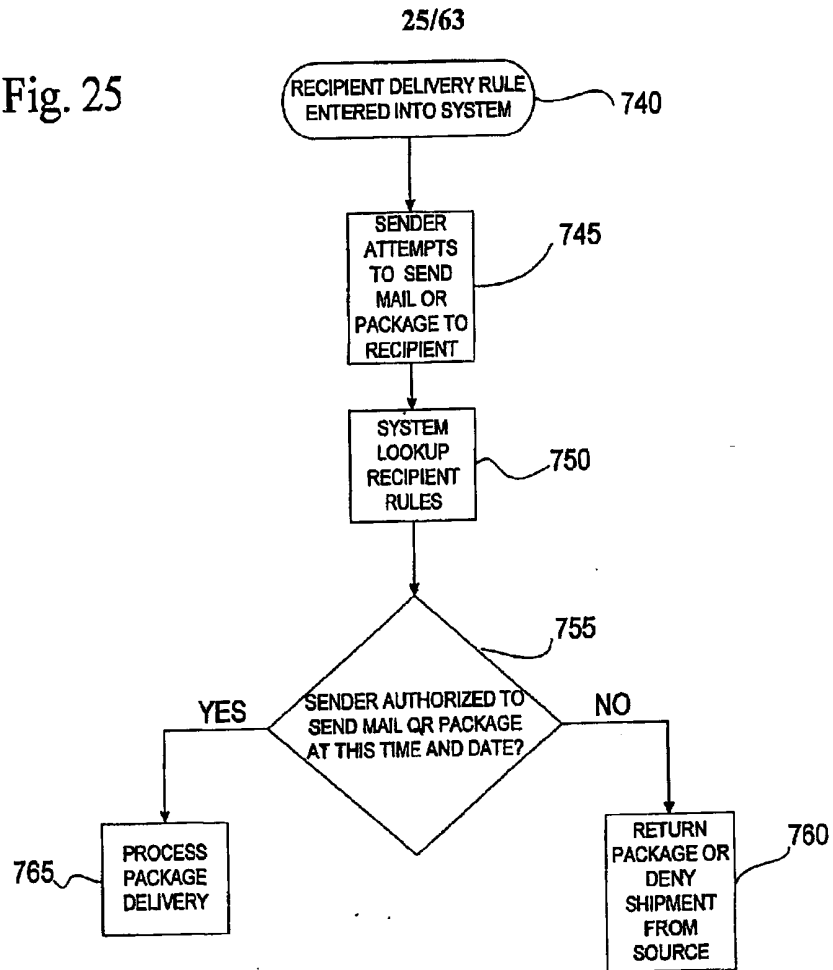
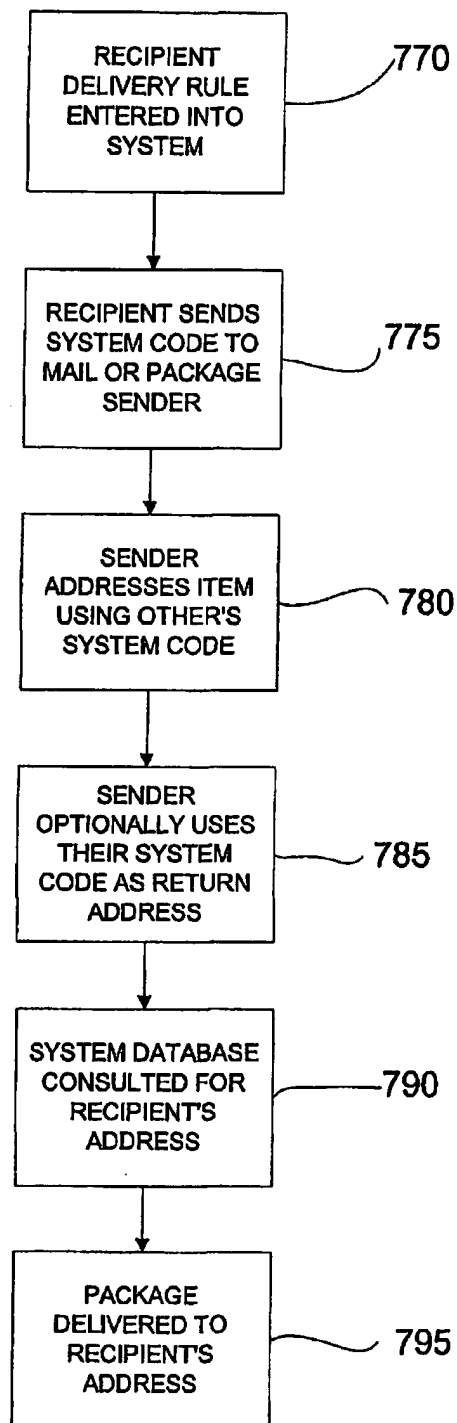


Fig. 25



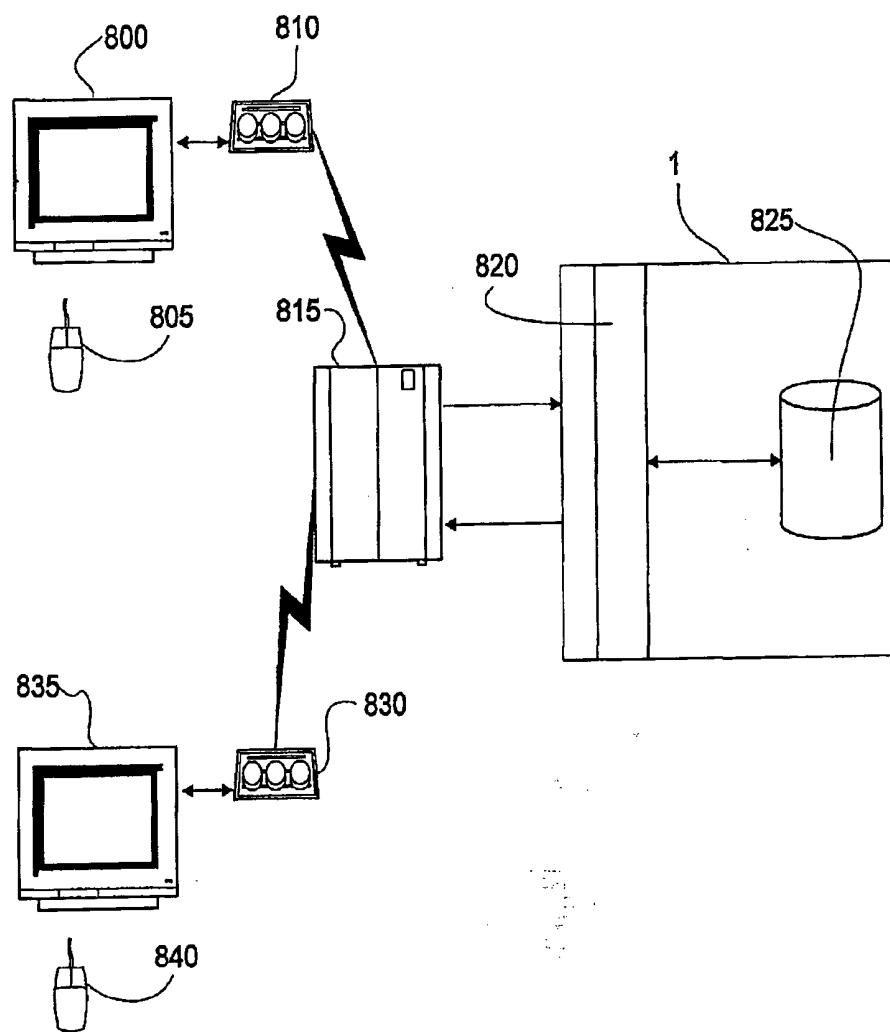
26/63

Fig. 26



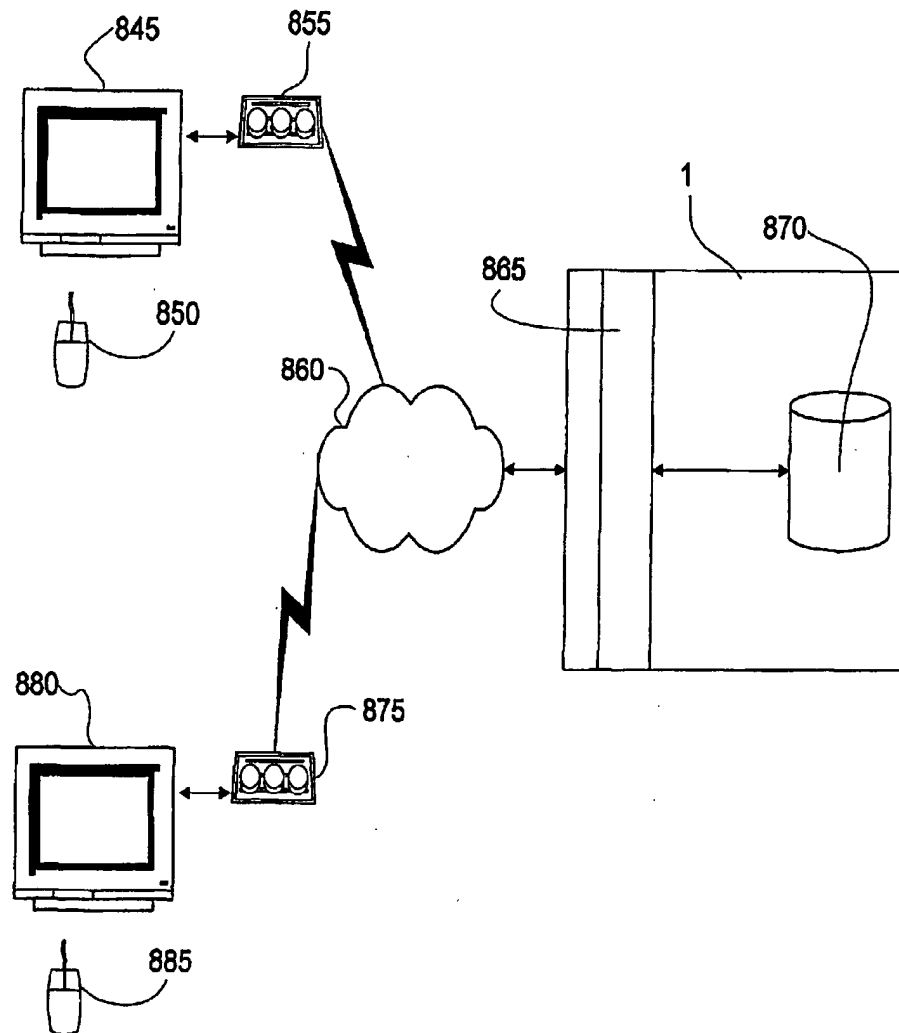
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Fig. 27



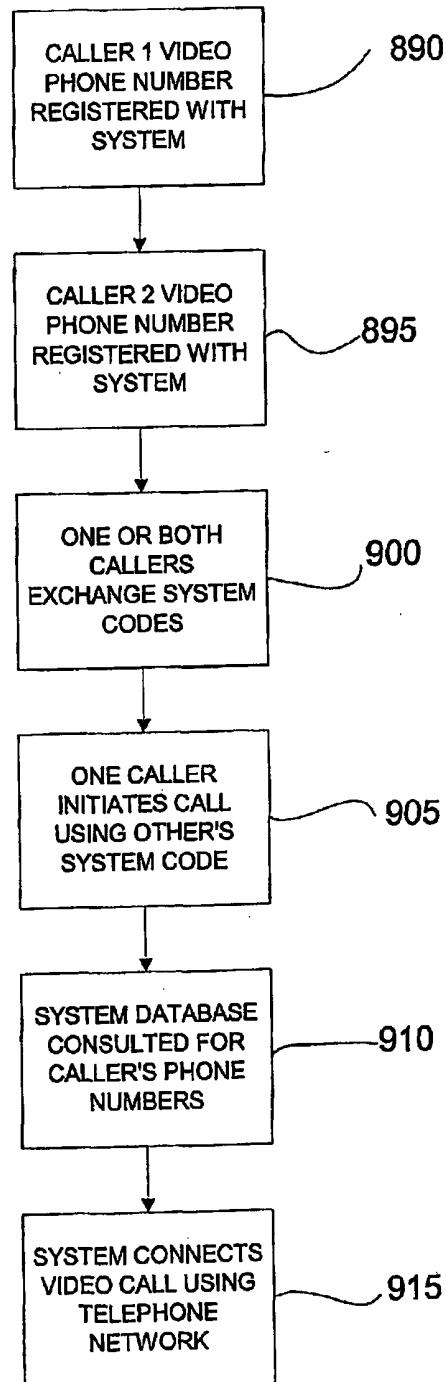
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Fig. 28



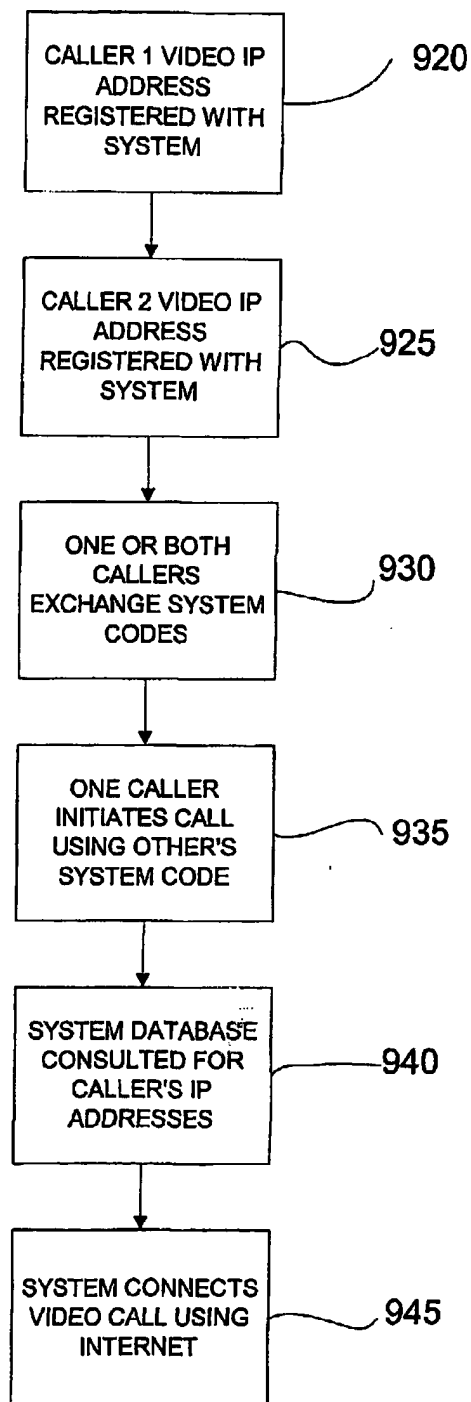
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Fig. 29



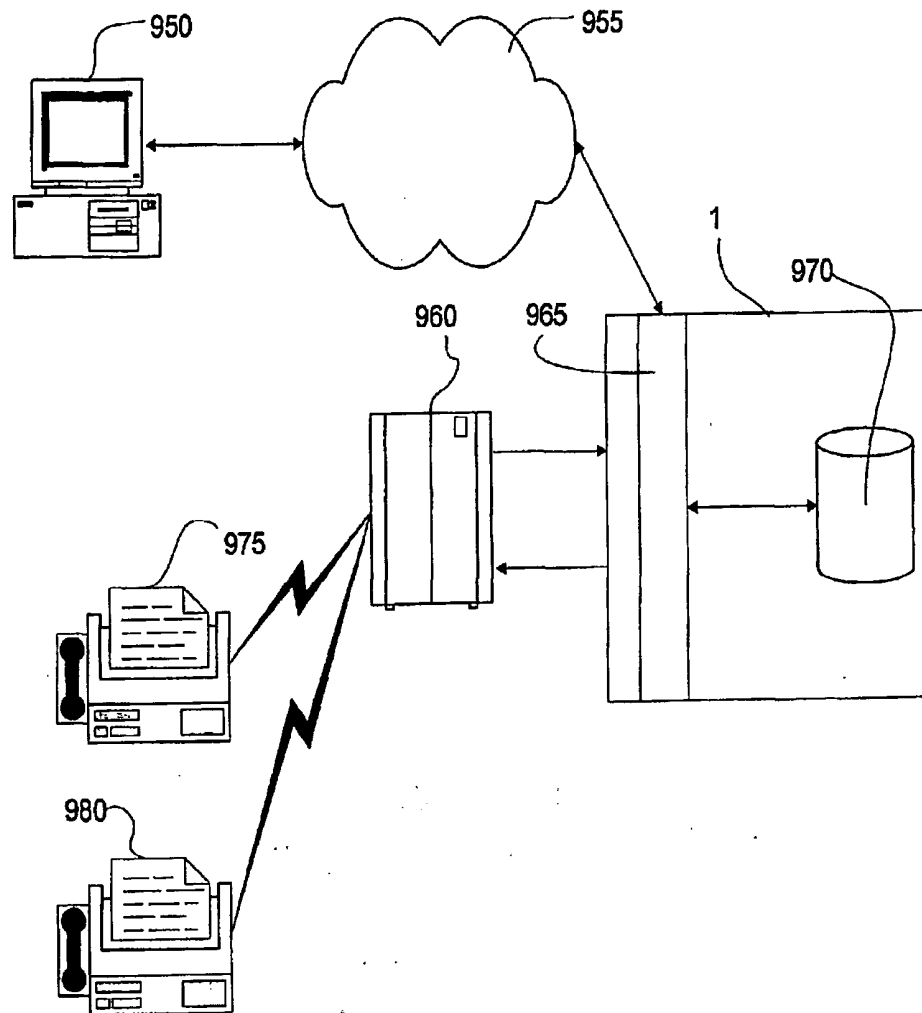
30/63

Fig. 30



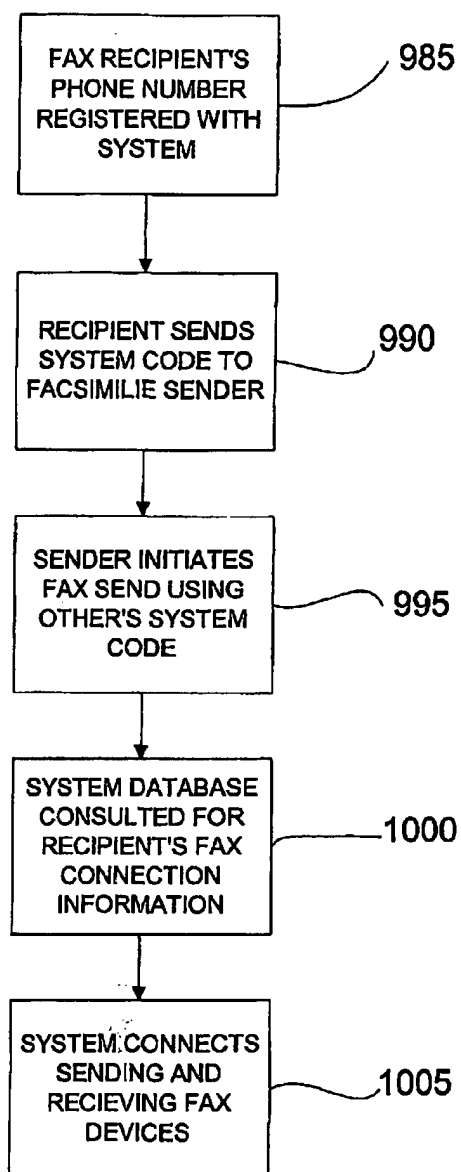
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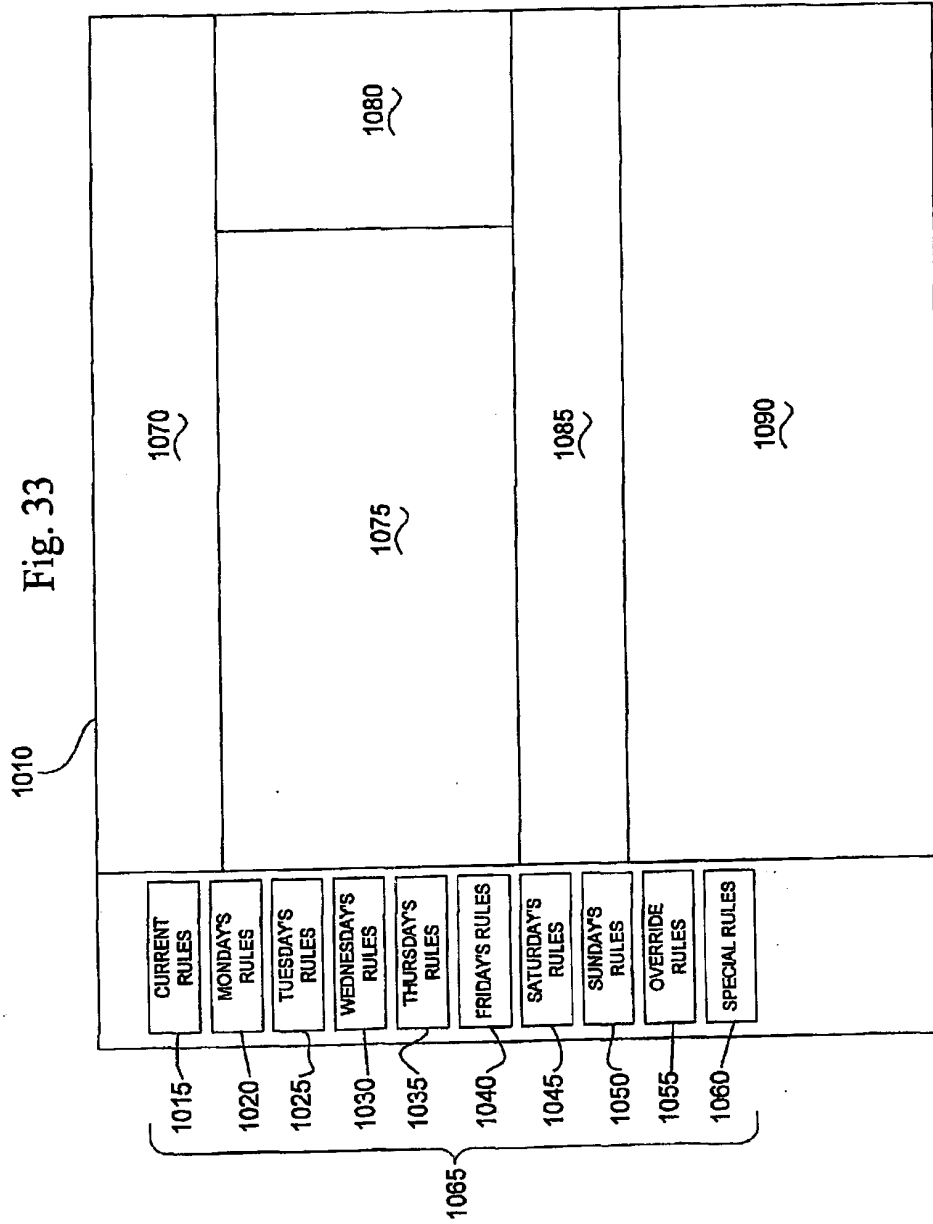
Fig. 31



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Fig. 32





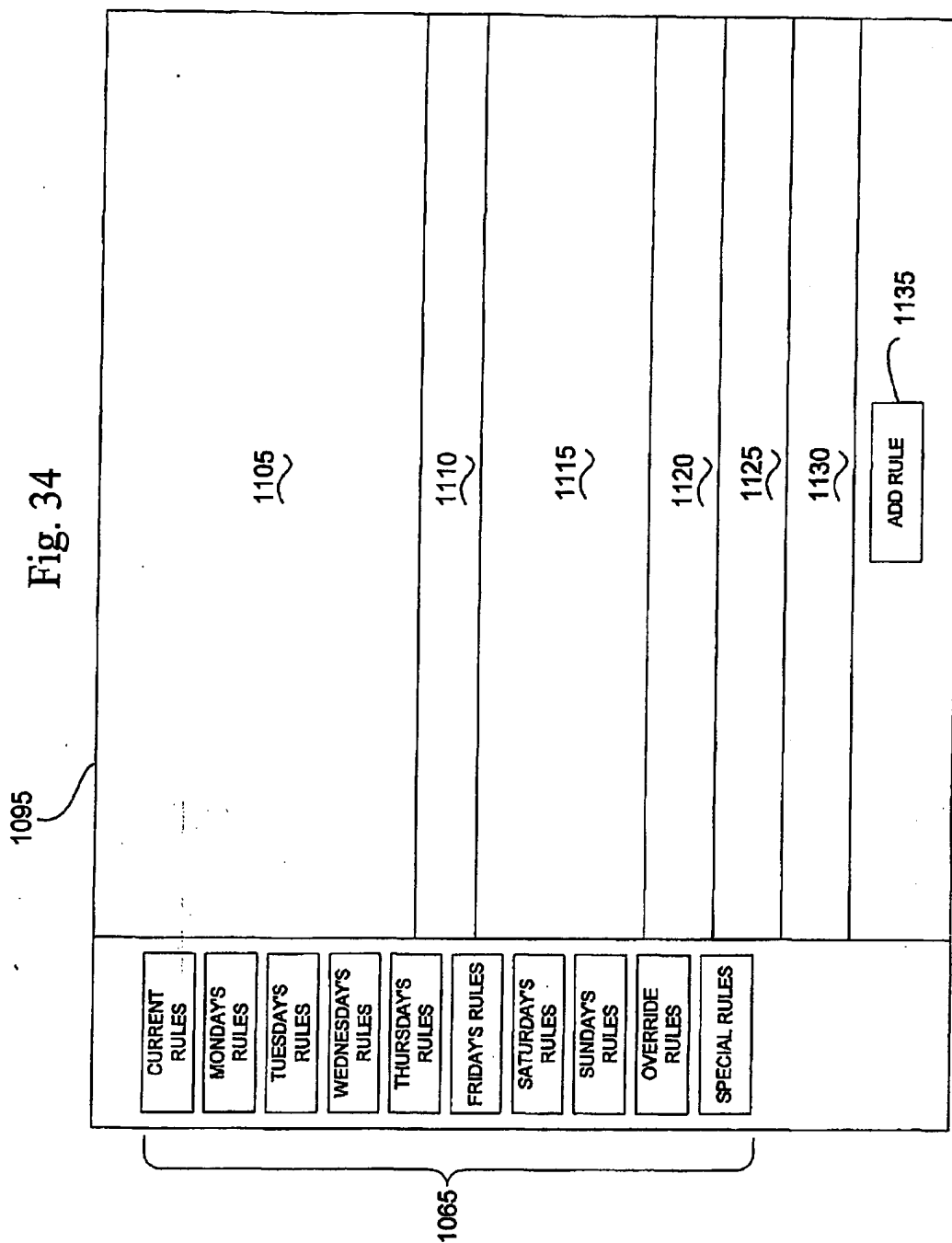


Fig. 35

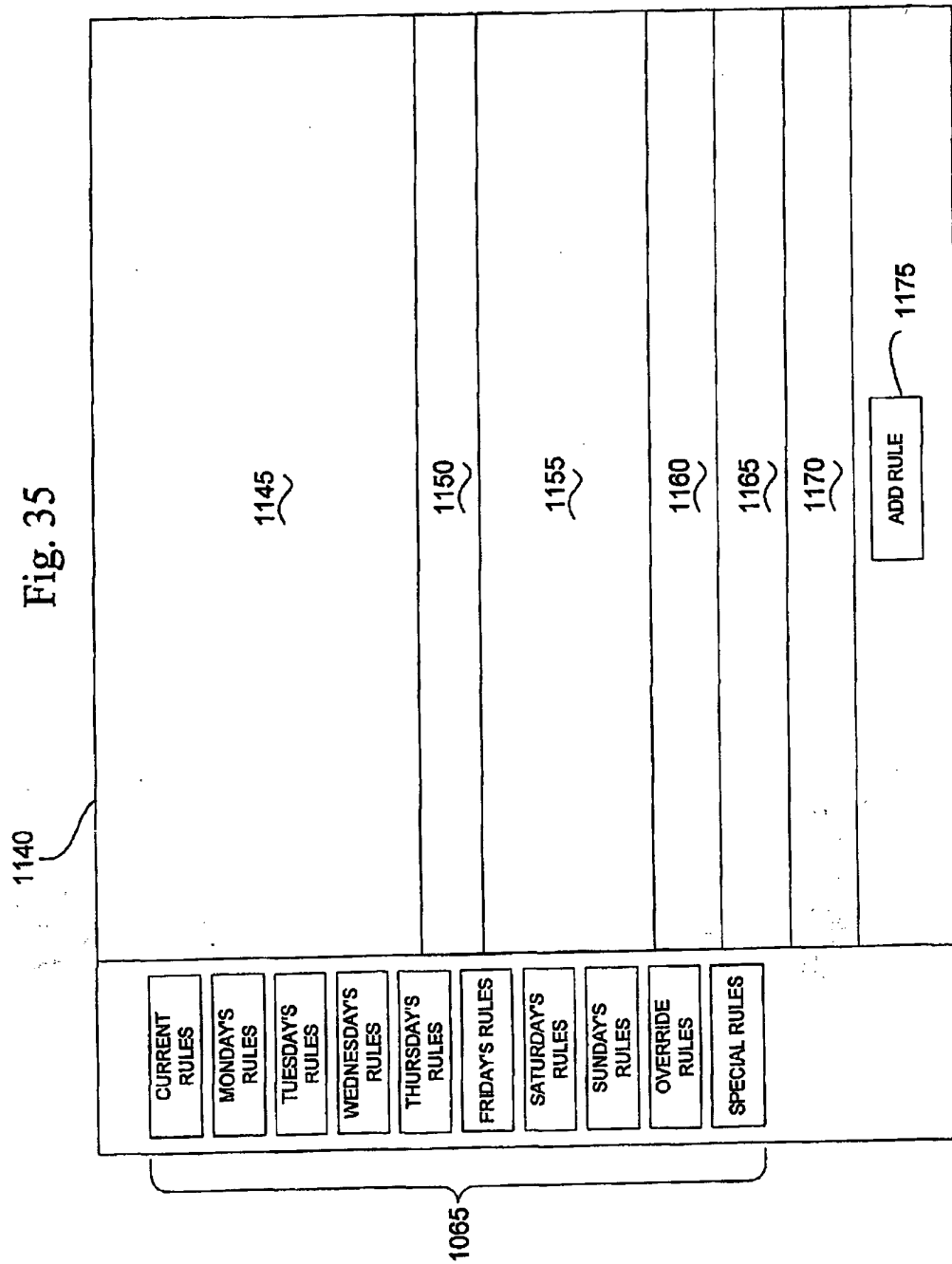
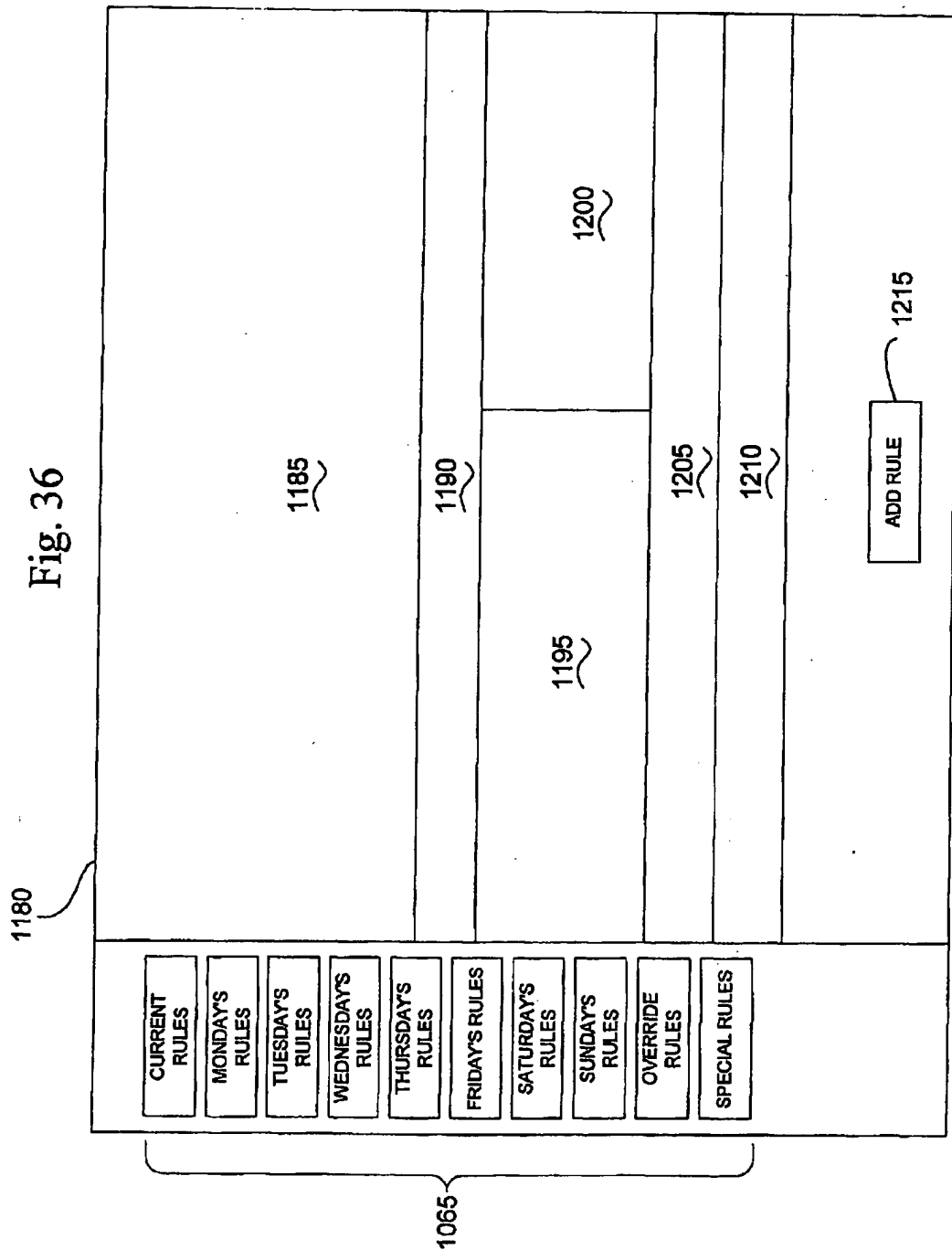
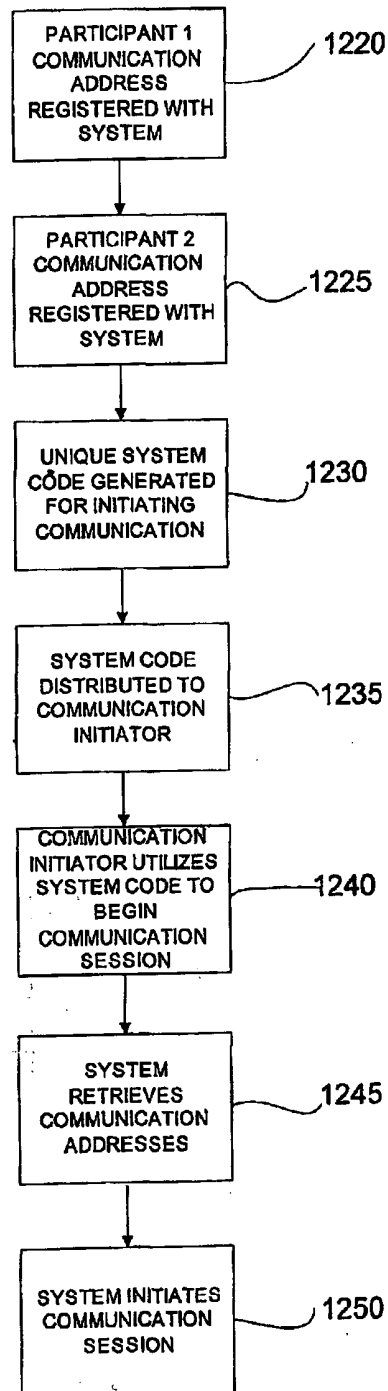


Fig. 36



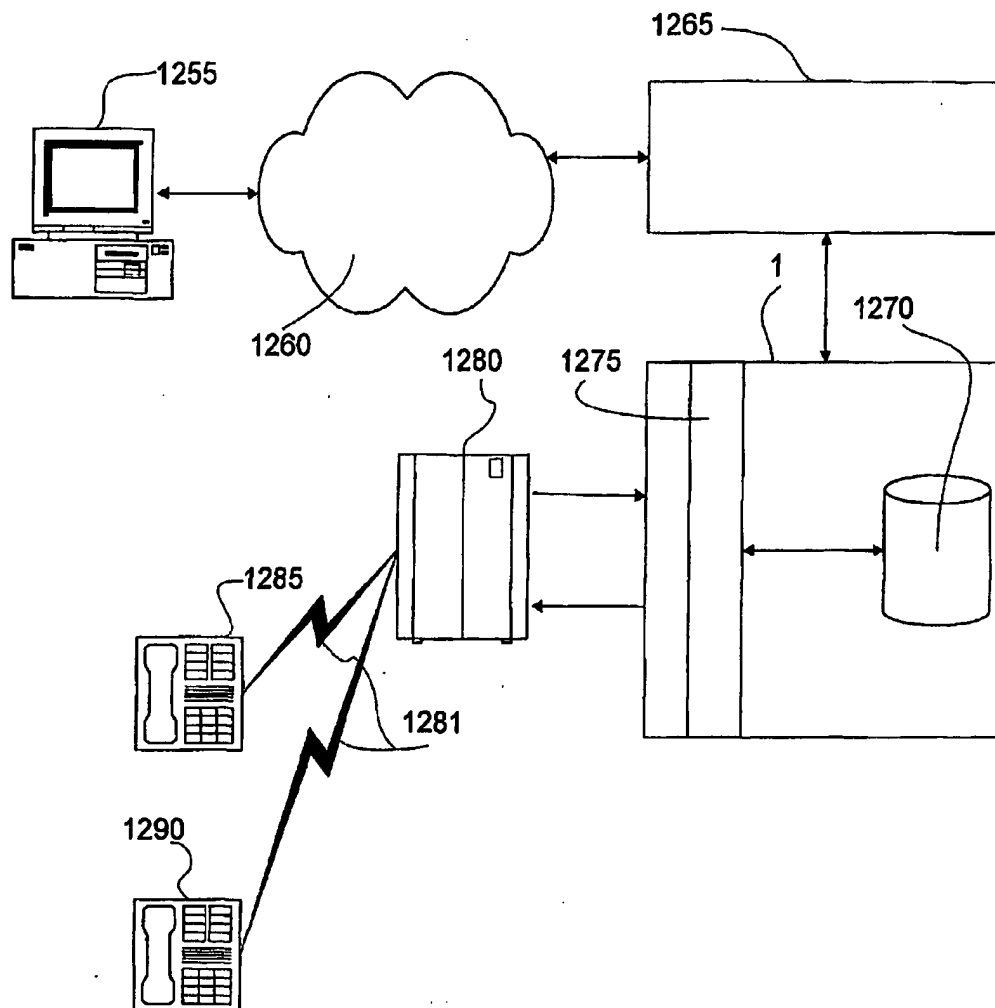
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Fig. 37



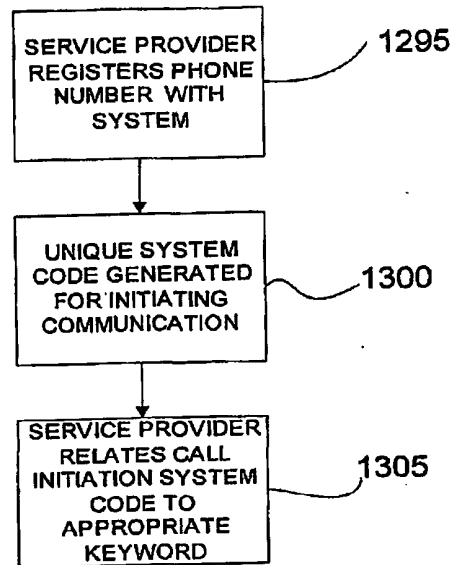
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Fig. 38



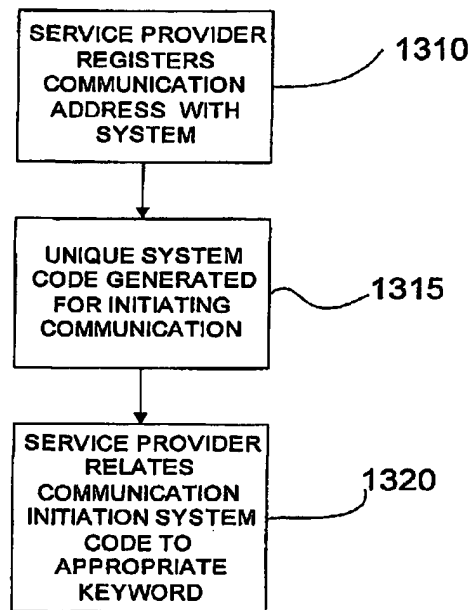
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Fig. 39



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Fig. 40



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Fig. 41

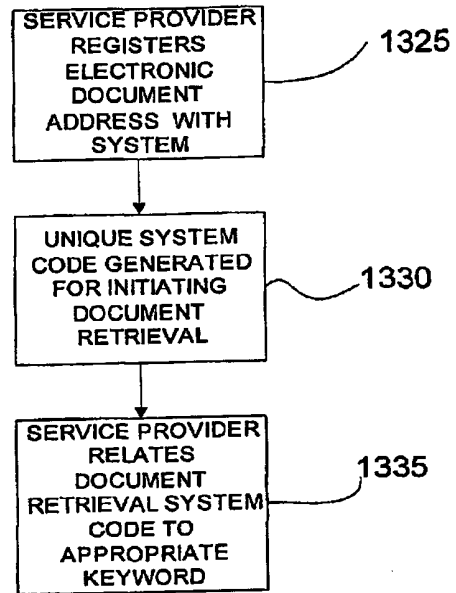


Fig. 42

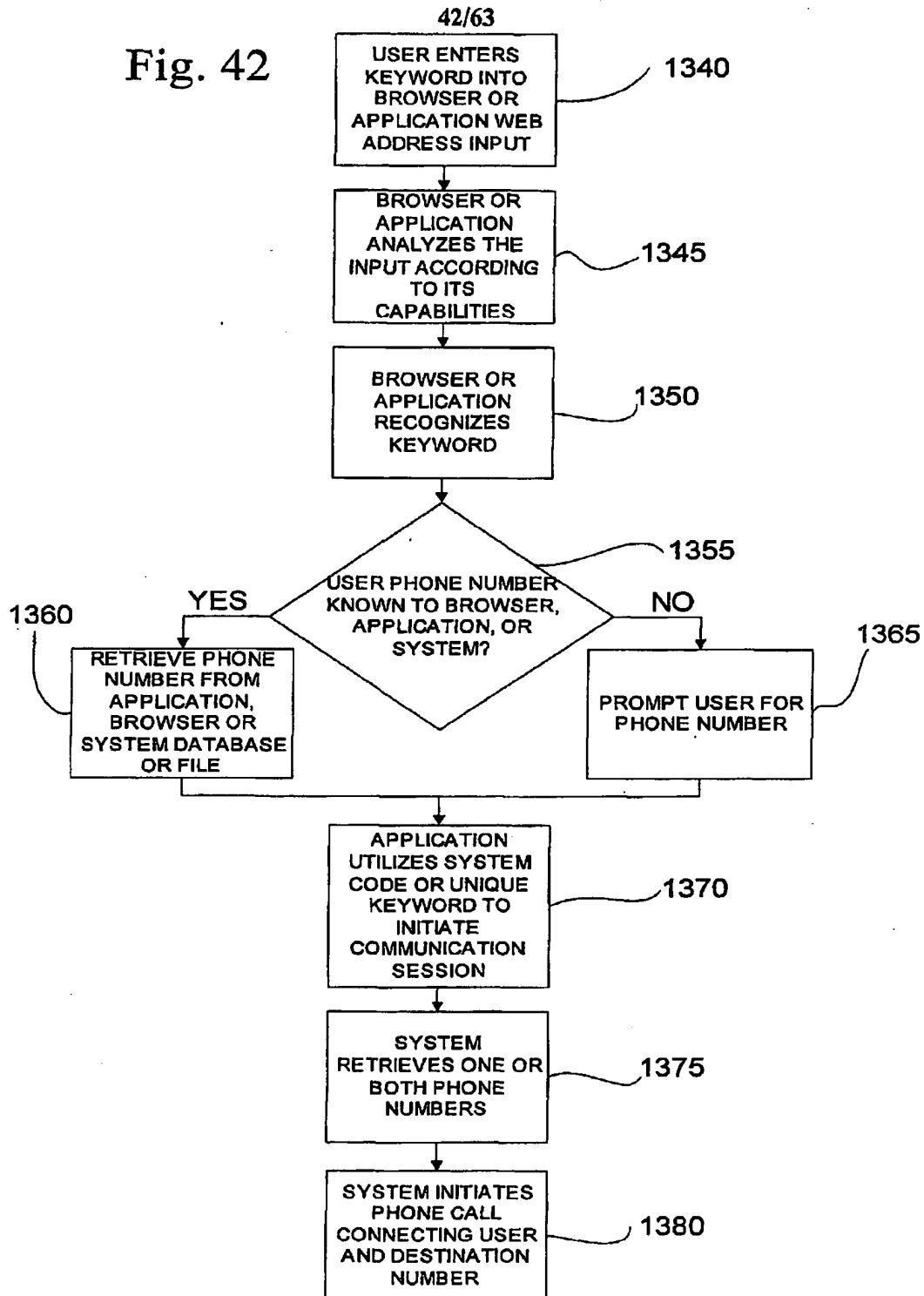
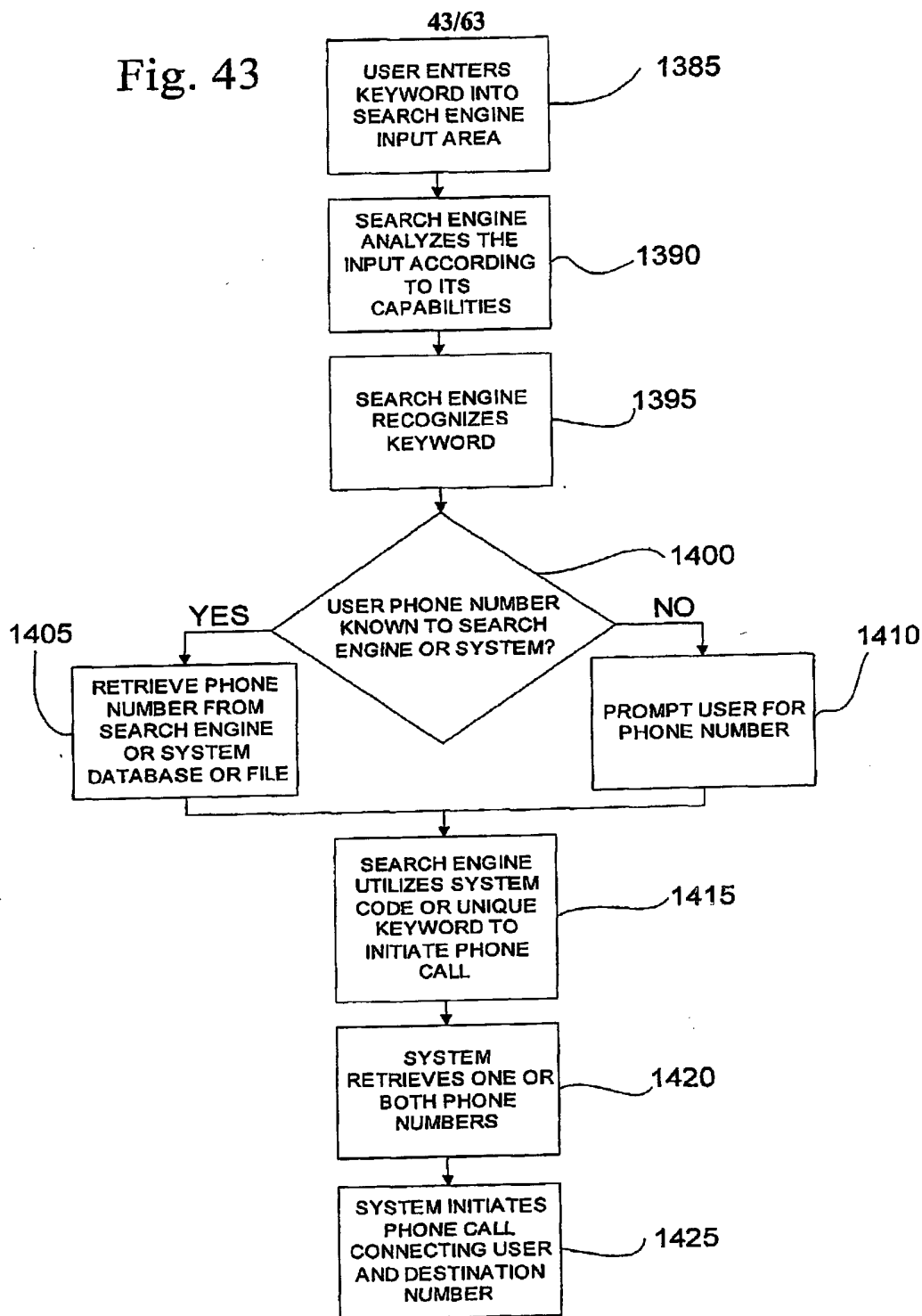
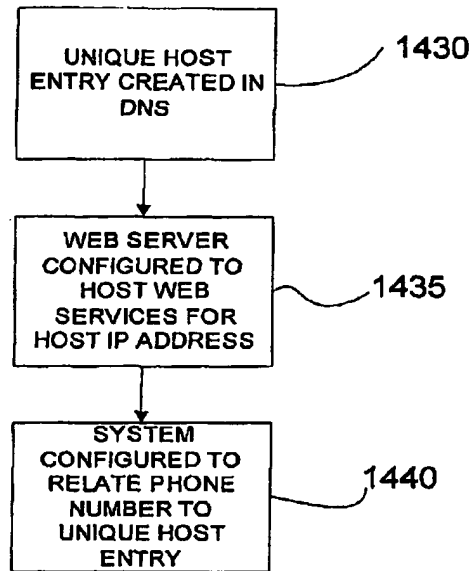


Fig. 43



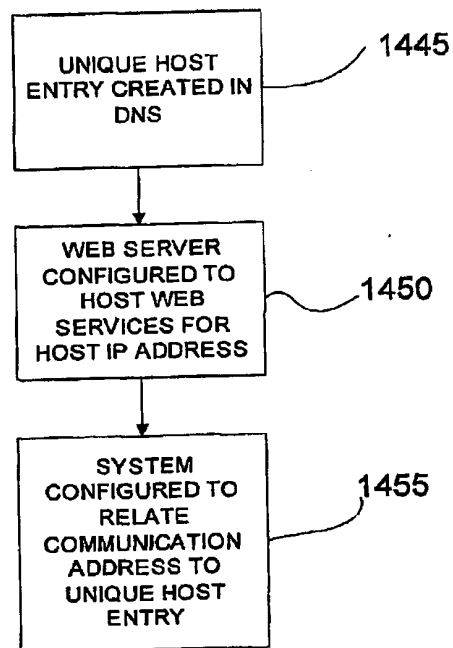
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Fig. 44



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Fig. 45



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Fig. 46

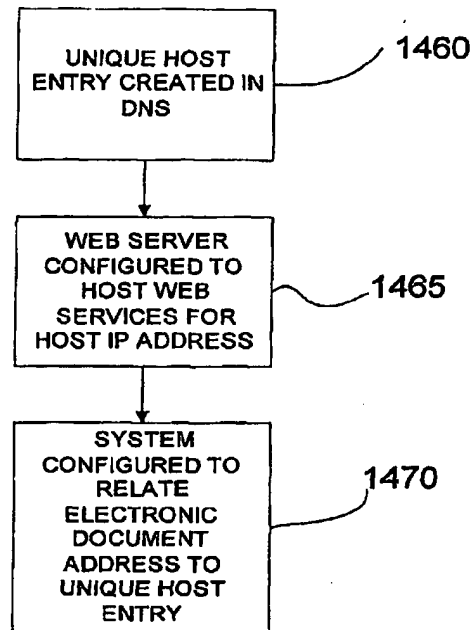


Fig. 47

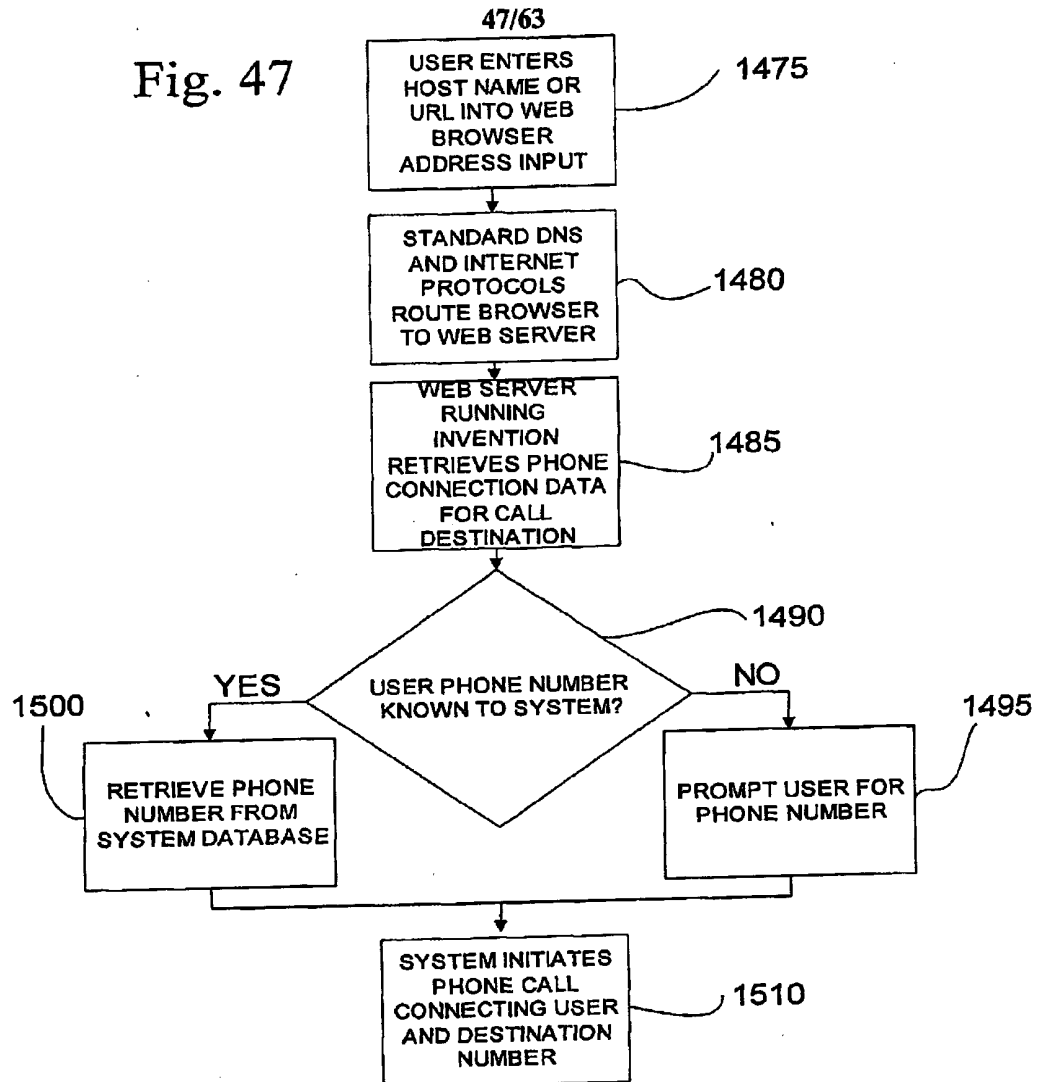


Fig. 48

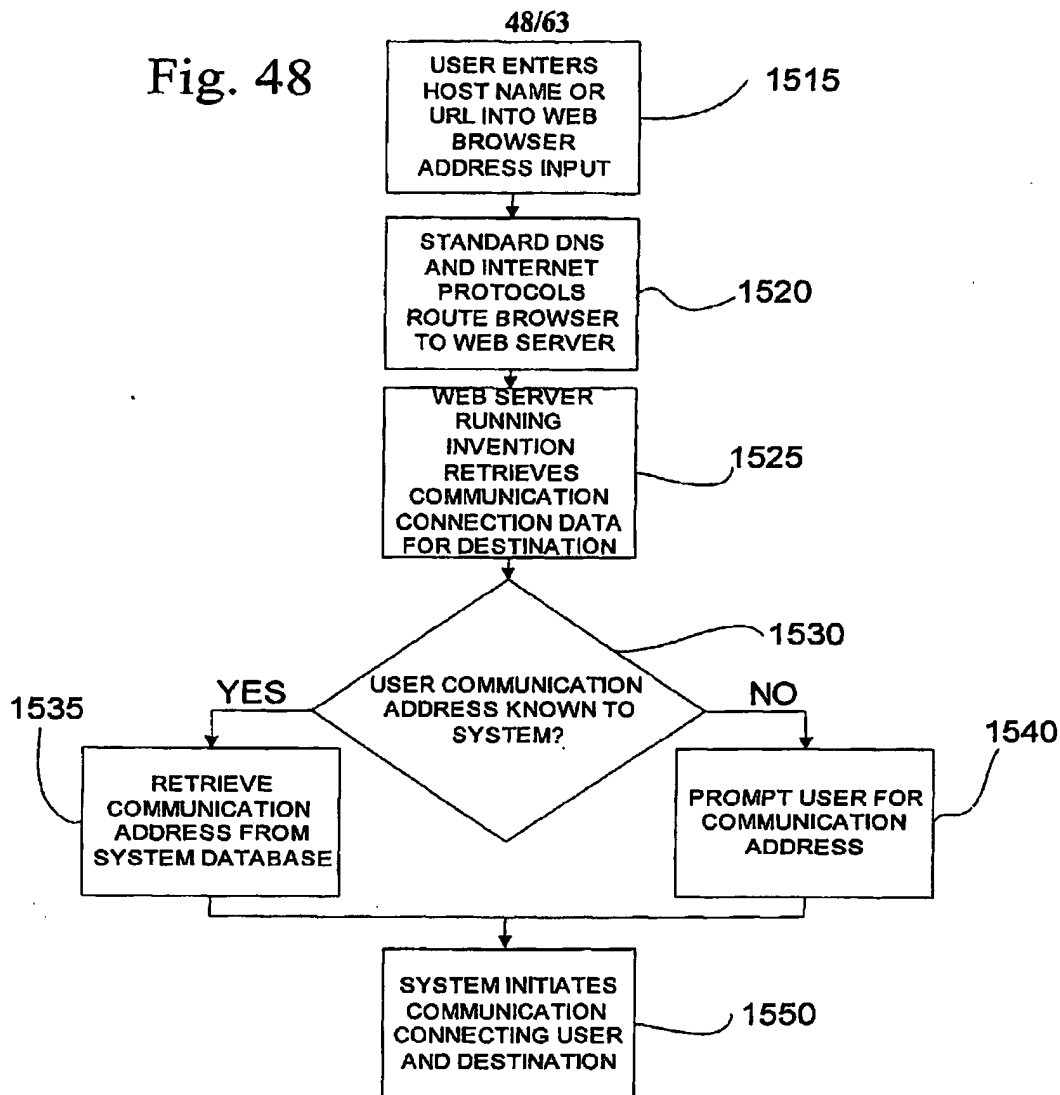
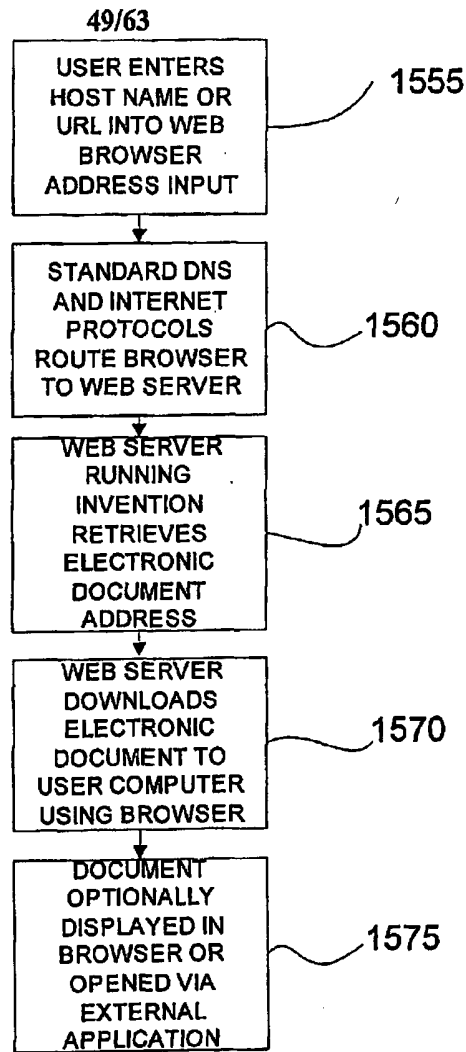
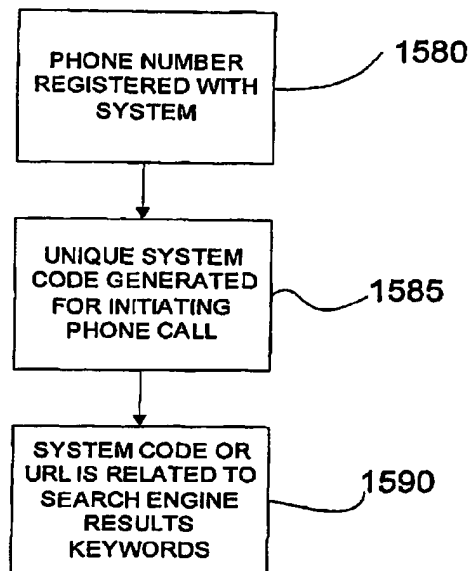


Fig. 49



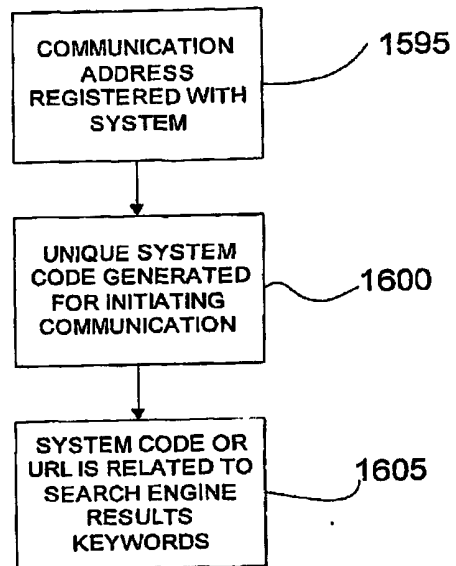
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Fig. 50



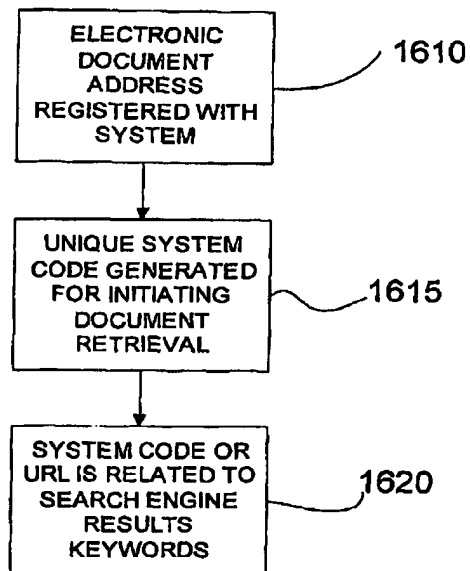
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Fig. 51



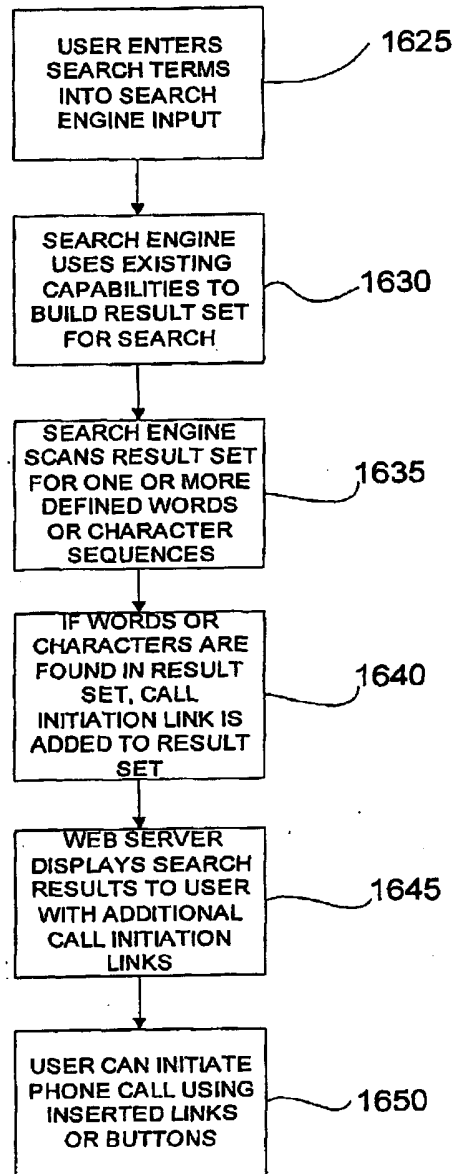
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Fig. 52



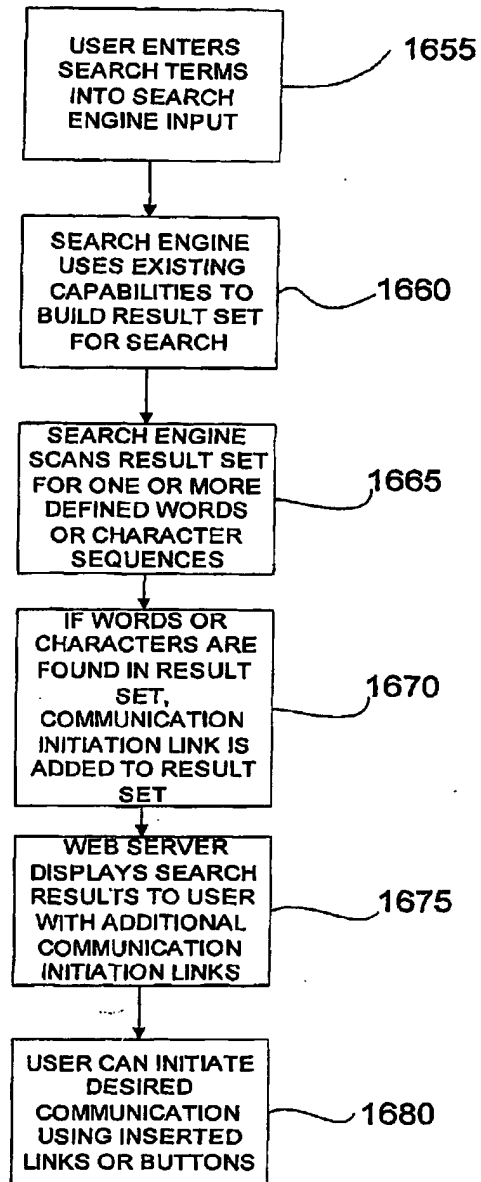
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Fig. 53



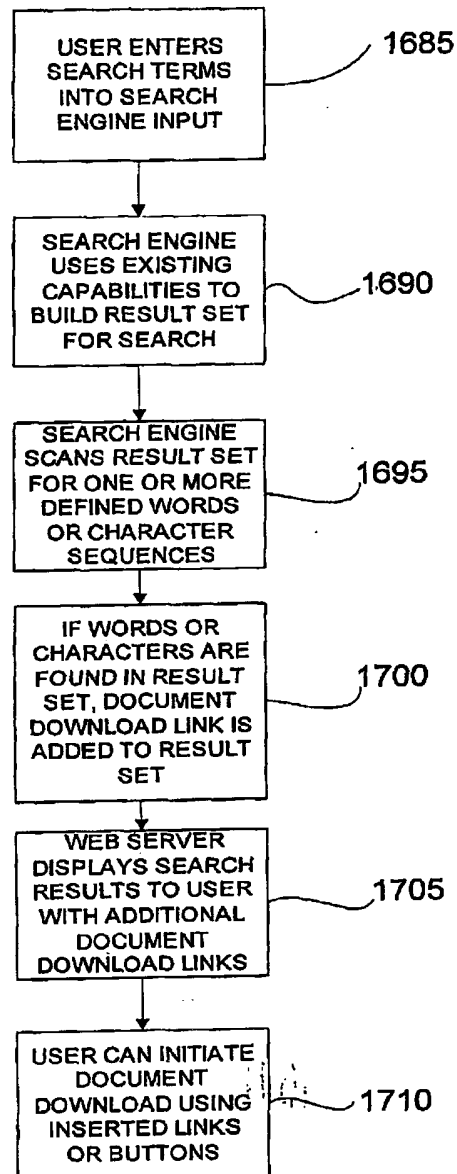
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Fig. 54



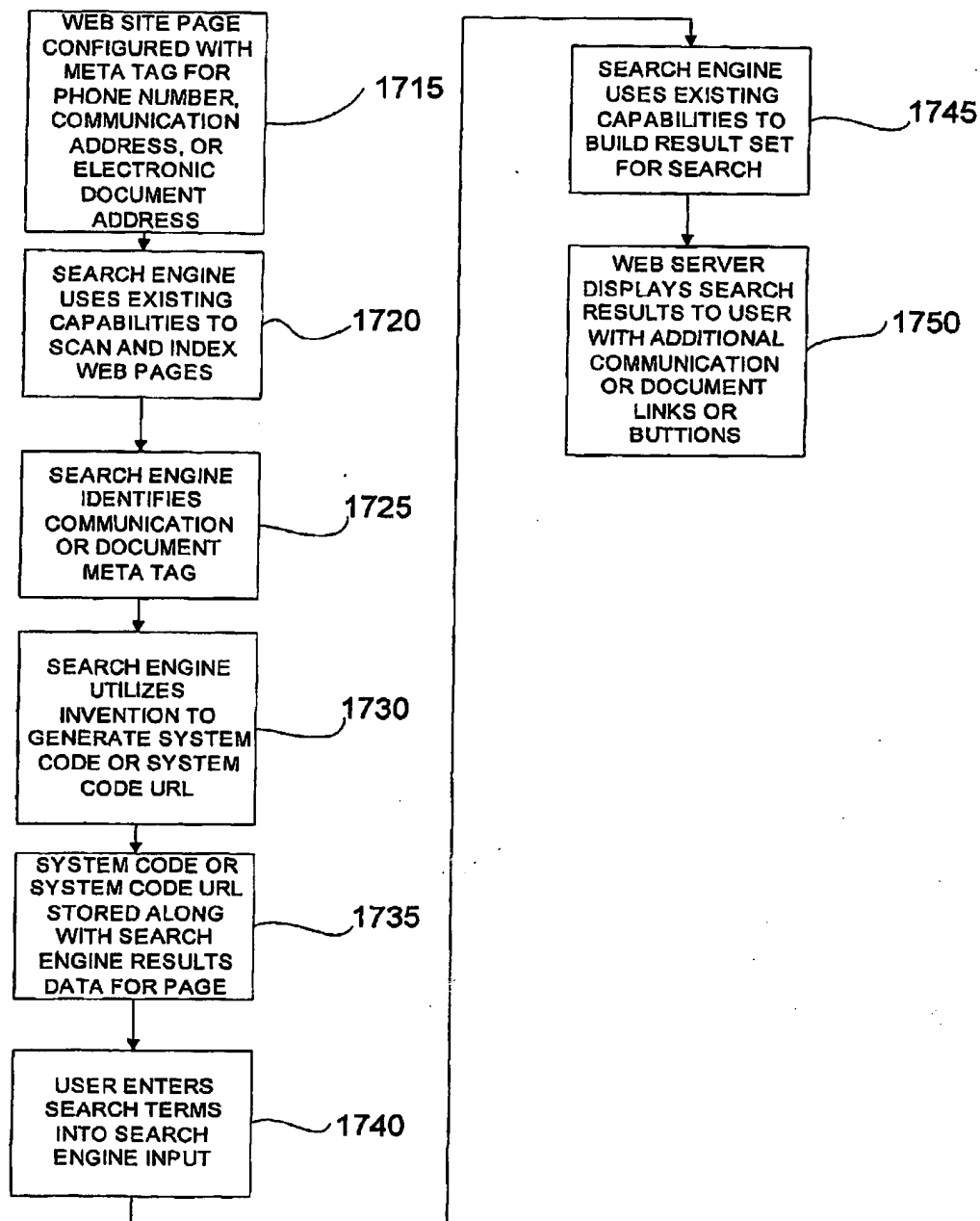
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Fig. 55



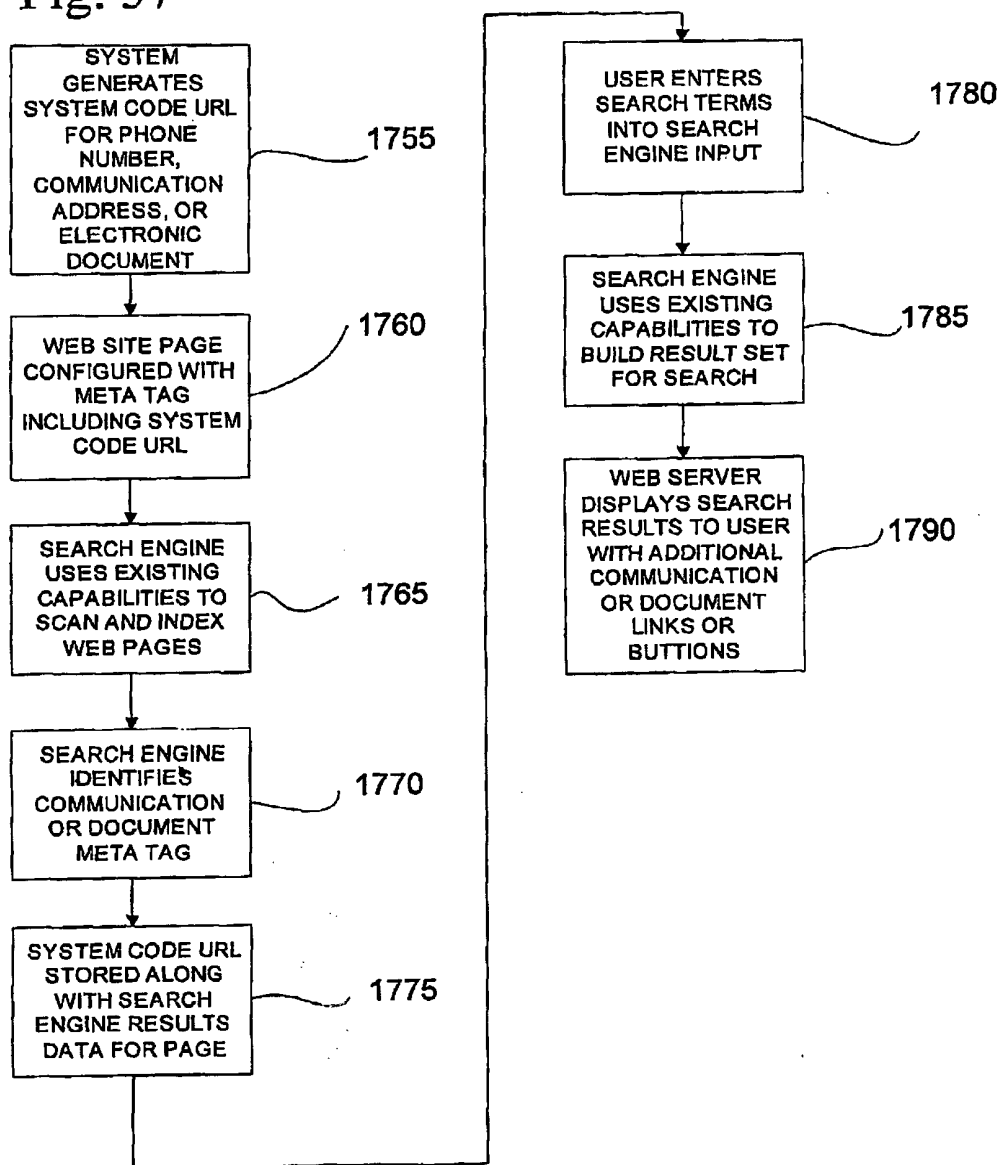
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Fig. 56



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Fig. 57



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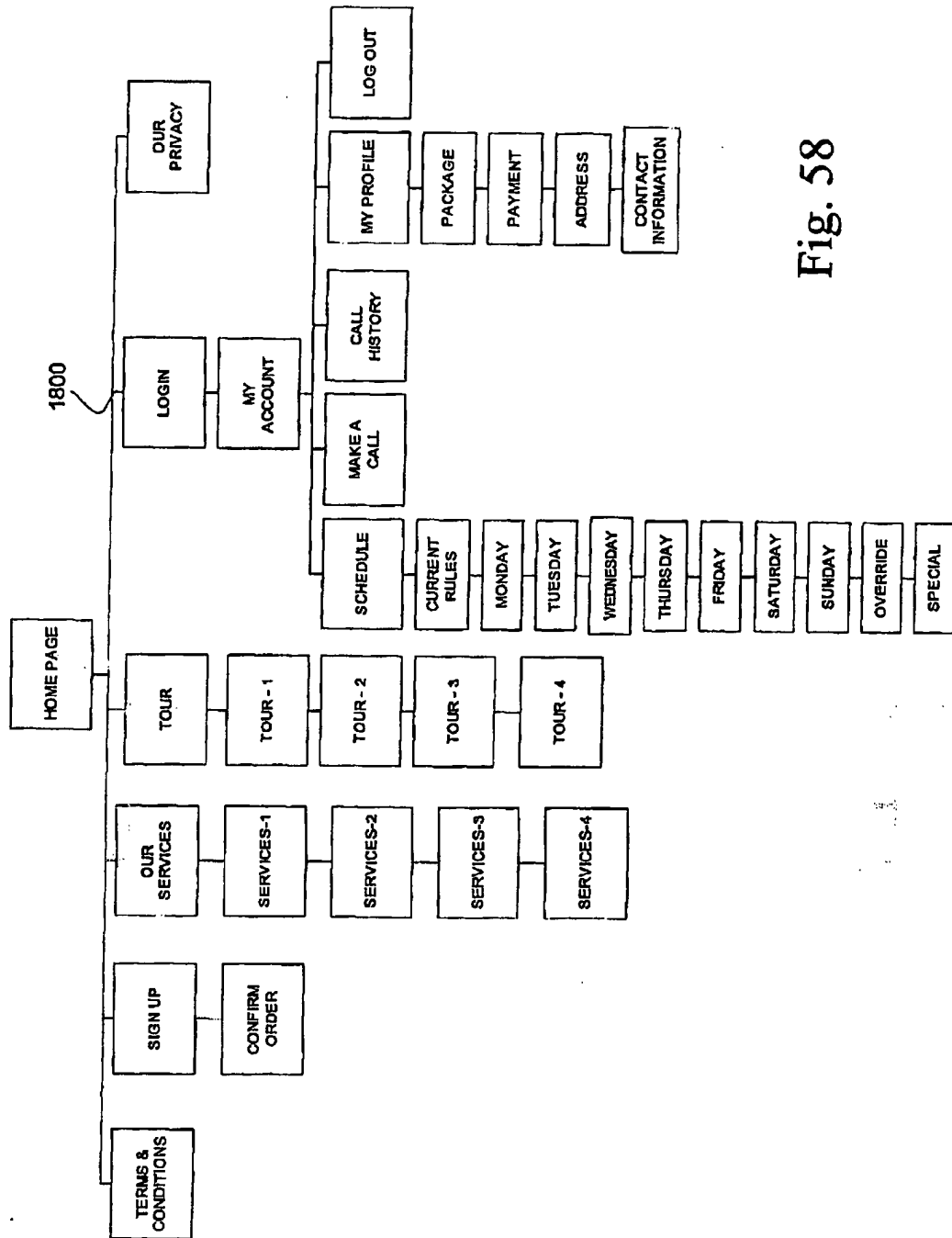


Fig. 58

Fig. 59.

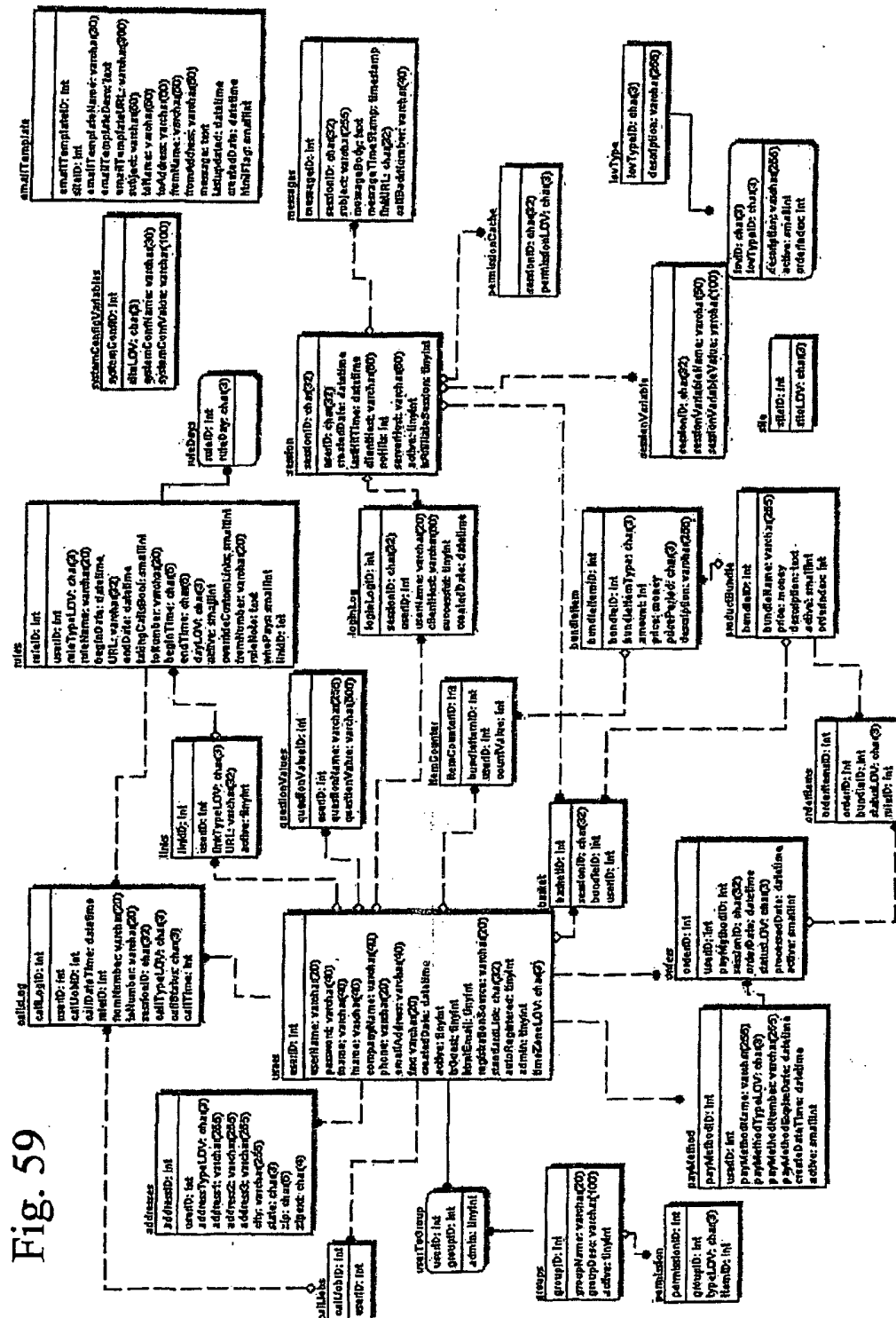
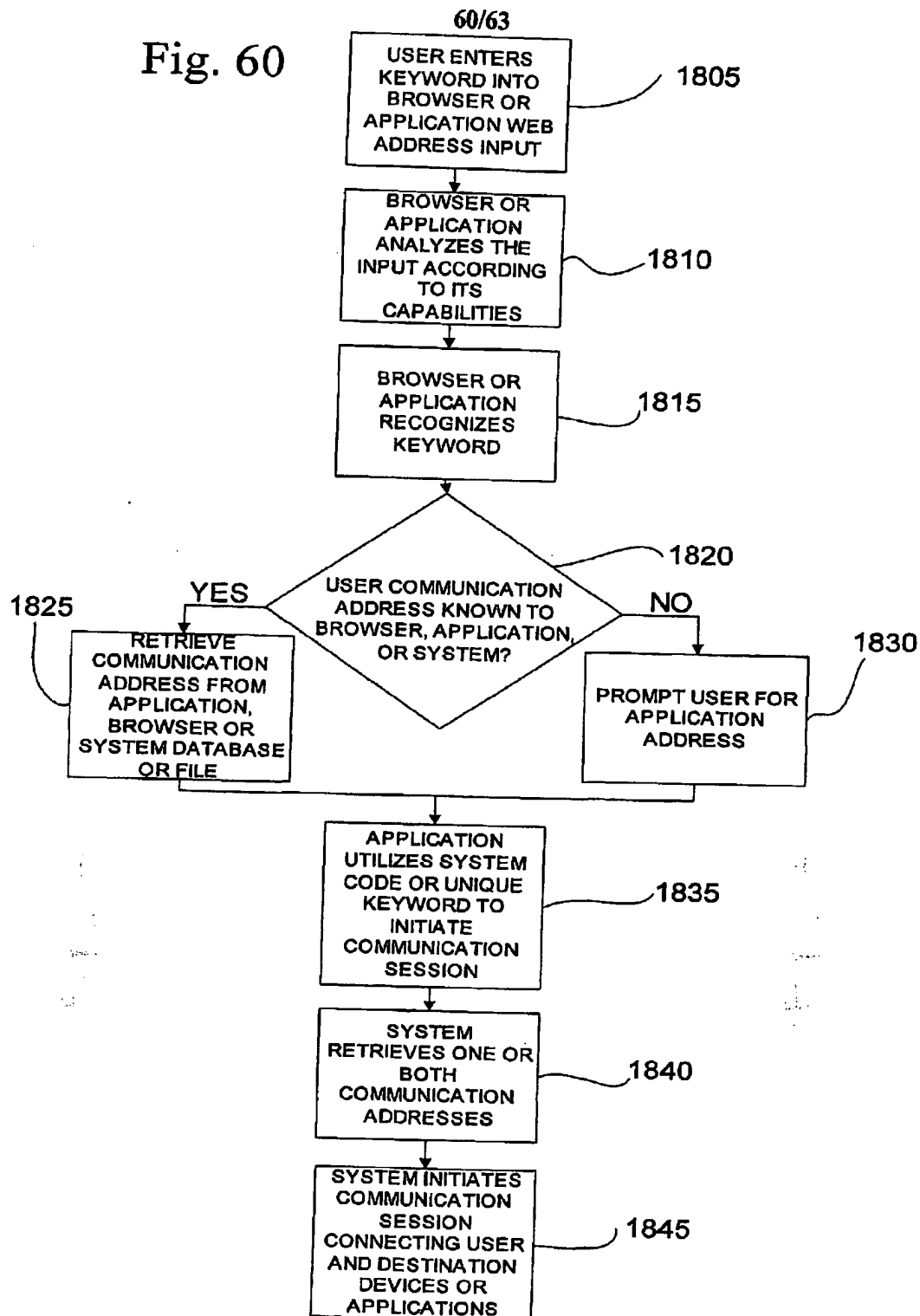
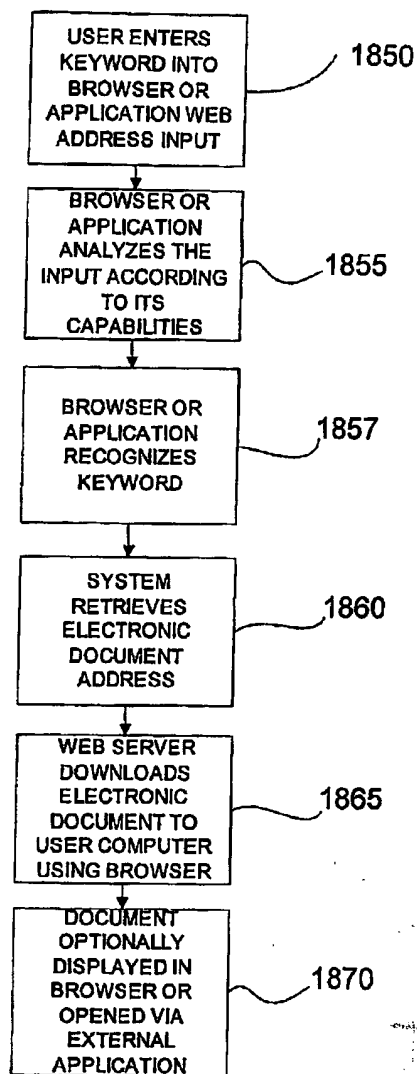


Fig. 60



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Fig. 61



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Fig. 62

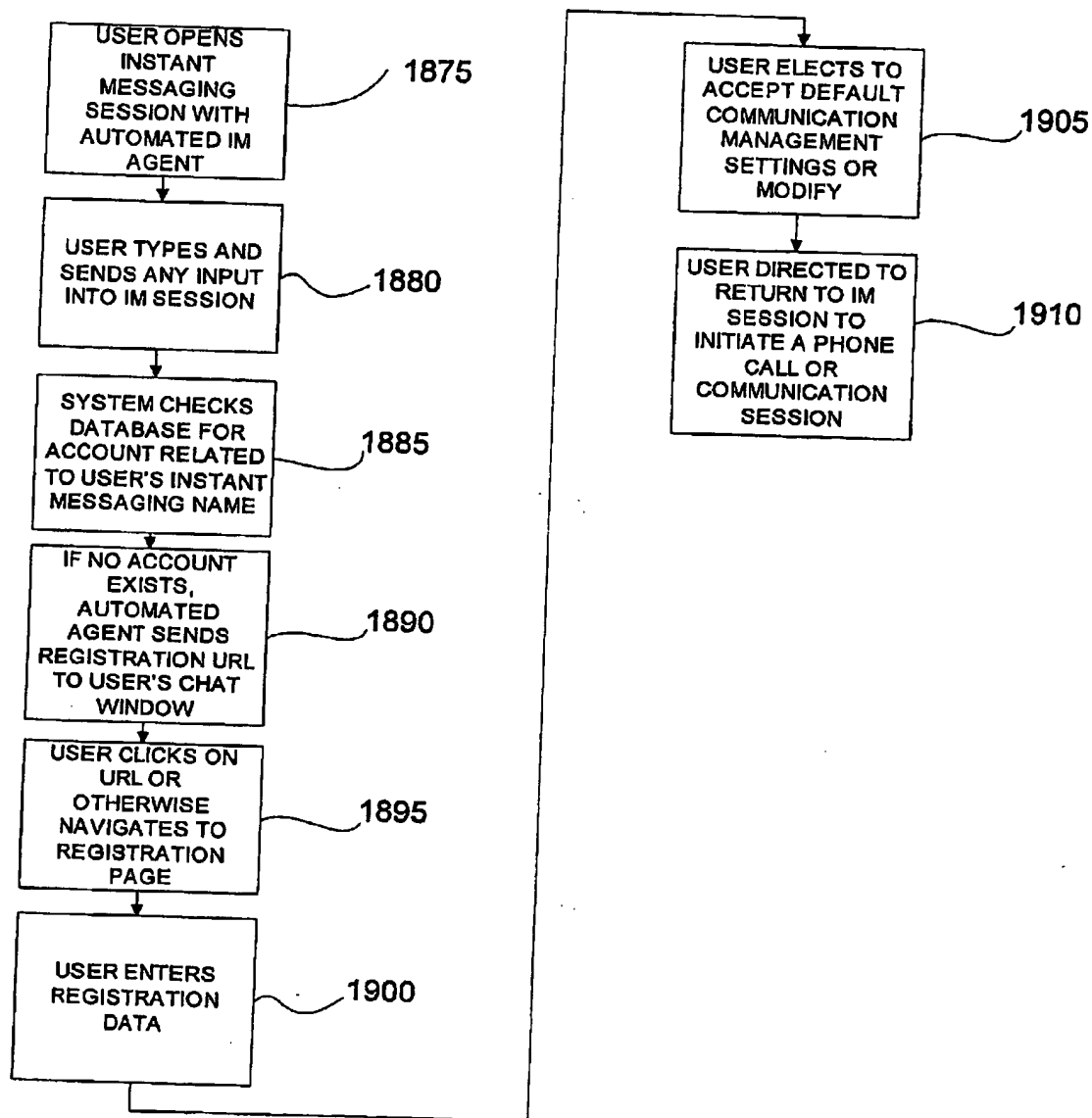


Fig. 63

